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Observing young children’s rough-and-tumble play

The relationship between symbolic play and executive function in young children

Parents’ views about child sexual abuse prevention education: A systematic review

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WELCOME TO OUR SECOND edition of 2011, another bumper edition of AJEC. I would like to take some time to share our compassion with those who are still feeling the effects of the floods in Queensland, northern NSW and Victoria, the fires in WA and the earthquakes in Christchurch and Japan. We acknowledge with deep sadness those who lost their lives, and our thoughts are with their families and friends as they try to rebuild their lives after tragedy. We also recognise how important it is for early childhood professionals to understand how to support children and families who have experienced such trauma. This is reflected in the growing ‘education for emergencies’ agenda. I draw your attention to the work done by UNICEF (www.unicef.org/emerg/index_48797.html), the Interagency Network for Education in Emergencies (www.ineesite.org), and various state government departments (for example, www.education.vic.gov.au/about/emergencies/floods.htm). We all need to know what to do, not only in the immediate period of crisis, but how to support children and families in the recovery period.

For those of us in NSW, this is an interesting time with the recent state election. Early childhood people have been lobbying as hard as they can to keep the profile of early childhood at the forefront of politicians’ minds. Lobbying is easier when we have hard evidence to back up our claims. We all think we know what is right, but politicians and economists want the hard data. Research is the only way we can develop what is necessary, both to drive change and to develop sound, evidence-based practices. AJEC provides a voice for this evidence, and it is up to us to use it wisely in guiding our practice and informing our lobbying. This edition provides us with some exciting material to steer our endeavours.

First we have three articles discussing forms of play. Play, as we know, is given a key role in the Early Years Learning Framework for Australia, but we need to be clear about what we mean by play. Yelland challenged us 10 years ago to think about play in a different way, and she continues to challenge us today to reconceptualise play and reflect on what we mean. From Canada, Tannock reminds us that rough-and-tumble play is an important, but often forgotten, aspect of play. Rough-and-tumble play contributes to children’s overall development and wellbeing and it is important that we understand how to support its development. Kelly, Dissanayake, Hammond and Ihsen examine the links between children’s executive functioning and the development of symbolic play. They argue children need to learn to inhibit their habitual responses to a situation in order to pretend a different reality.

Following these we have a range of articles addressing issues of curriculum and pedagogy. From New Zealand, Grey reminds us that we have a responsibility to teach children cybersafety so that they learn to perform ethically as cybercitizens. She argues we must work closely with families around cybercitizenship, particularly as we, the professionals, are likely to have more training in issues of cybersafety than some of the families with whom we work. One area in which we may sometimes feel inadequate is in science education. Edwards and Loveridge (also from New Zealand), argue that many early childhood professionals sometimes feel they have inadequate knowledge of science to support children’s scientific learning. They propose we need to focus on team teaching in this area, and the skills needed to effectively team teach. Mackey and Vaalikki (New Zealand researchers) investigate education for sustainability. Their article takes a children’s rights approach, ensuring that children were active and equal participants in the research process. Garvis, Twigg and Pendergast focus on arts education. They suggest that many pre-service teachers have bad experiences in art education and these contribute to poor self-efficacy which inhibits both their ability to support children’s learning in this area, and to support the learning of pre-service teachers they mentor. Following the thread of pre-service education, Ortlipp and Nuttall examine the professional practice experiences of students from culturally and linguistically different backgrounds. They draw our attention to the impact of different expectations around teaching and learning, and the way different life experiences and knowledges affect student performance in the placement.

The recognition that our experiences and background influence our practice is continued in the article by Purdue, Gordon-Burns, Rarere-Briggs, Stark and Turnock. These researchers examine inclusion in New Zealand early childhood programs and show that, despite legal requirements, some programs and staff have exclusionary policies and practices that are underpinned by their attitudes and beliefs around difference. Attitudes and beliefs around different forms of early childhood provision underpin the research of Barblett, Barrett-Pugh, Kilgallon and Maloney. This team looked at the transition of children in WA from child care to kindergarten programs (a transition in WA which represents movement from services auspiced by the Department of Communities to those of the Department of Education). Despite acknowledgement of the importance of a carefully managed transition,
they found that practice was fragmented, and at times non-existent. Kindergarten teachers tended to expect childcare practice to change to reflect what they did to facilitate transition. Despite these evident difficulties with transition, Wildy and Styles demonstrate, using a universal test of achievement, that WA children are beginning school with increasingly better levels of literacy and numeracy. Given that data suggests that children in WA are performing less well at age 15, they flag concern about what is happening to children in the intervening years to impact on their achievement in such a manner. They also flag concern that teachers may not be prepared to support the greater number of higher performing children in the early years of school.

Finally we have two articles that focus around families. Hunt and Walsh have undertaken an extensive literature review on parental views of child sexual abuse prevention education. They found little research in this area, and only one article (relatively old now) from Australia. Given we now have a clear child protection framework in Australia (Council of Australian Governments, 2009), it would be useful if we were to have better evidence upon which to base our actions arising out of the framework. Finally, Colmar reports on an intervention program to support the development of children with language delays. She found coaching parents in ways to support their children initiating conversations, and how to respond to open-ended questions in a book-reading context, had a positive impact on children’s language over a four-month period when the children began with a baseline of a 60-word vocabulary.

I commend this suite of research work to you. It represents the activity of Australasian early childhood researchers, and as such, I believe it compares with the best in the world. Happy reading, happy reflecting and enjoy your work with children and families.

Reference

Margaret Sims
University of New England

Addendum
Early Childhood Australia would like to apologise for the misprints in AJEC 1003 with the corrected list of author details below.

AJEC 1003 Addendum
Page 13 Findings from an evaluation of an intervention targeting Australian parents of young children with attachment issues: The ‘Through the looking glass’ project
Paul Aylward, Pam Murphy, Kaye Colmer & Margaret O’Neil
Reconceptualising play and learning in the lives of young children

Nicola Yelland
Victoria University

A DECADE AGO I WROTE an article entitled Technology as play in which I called for early childhood educators to rethink the way in which they regard play. This involved not only incorporating the notion of playing with new technologies but also critiqued the essence of what constituted play and the link with learning that was viewed uncritically. Here, I review and update this discussion, revisit the literature about how play is conceptualised and suggest that, while play is an essential component of exemplary early childhood experiences, it needs to be related to new technologies and pedagogical practices that are designed to support learning in diverse ways, rather than being regarded as the only catalyst for learning that occurs automatically in all types of play contexts.

Young children play and learn ...

Play has characteristically been viewed as the mechanism by which all young children interact with their worlds and learn. Although definitions of play seem hard to come by (Fleer, 2009, p. 1) it seems to have a universal role in Developmentally Appropriate Practice (DAP) and early childhood programs that are advertised as being ‘play-based’. In this way it has become synonymous with learning in the early childhood years. This is not surprising when you think about the amazing growth of children during the ages from birth to five years of age that occurs for the large part outside of formal educational settings, and the mastery of skills and knowledge about their world that they acquire during this time. In care contexts, DAP with its strong links to Piagetian theory, and more recently to the social constructive views of Vygotsky, it has always been contended that play-based programs are the essential component for quality. DAP has withstood the onslaught of the downward push for academic curriculum in the early years. This has occurred as a result of the increased emphasis of high stakes testing which has meant that there has been an increasing focus on overt behaviour within a limited range of activities and skills. In fact DAP and high stakes testing represent the opposite ends of a continuum of early childhood curricula ideals and it seems as if they shape programs in most of the western world. On the one hand we have a view of early childhood curriculum as sets of dispositions and practices that are deemed to be developmentally appropriate and suitable for all children across the world. These are categorised and explicaded so that children are provided with opportunities to develop them holistically and are nurtured to be curious, creative and inquisitive. In contrast, high stakes testing has created contexts for curriculum which view the world as a collection of skills and overt behaviours that can be measured by multiple choice answers. Accordingly, early childhood is seen as a time to introduce and practice these skills in more structured and formal activities so that they might be observed and recorded as viewed in checklists and tested for formally.

An analysis of early childhood foundation texts reveal a view of play that is constituted as, ‘... a rich and varied medium for learning’ (Gonzales-Mena, 2008), or as being the only vehicle to develop ‘... the cognitive, social, emotional and physical domains’ (Justus Suss, 2005). Yet in such texts specific definitions of play are hard to find. Traditionally, play has been regarded as not work and aligned with qualities that set it apart from work. For example, Gonzales-Mena (2008, p. 99)
suggests that there are five characteristics that separate play and work. They are: active engagement, intrinsic motivation, attention to the means rather than the ends, non-literal behaviour and freedom from external rules.

We know from observations in educational settings that when all these elements that traditionally define play come together effectively, they can be the characteristics that define activities or work in the school context. That is, when school work is authentic, relevant to the lives of the children and thus engaging, children feel a sense of belonging to the ideas inherent to the task and their mode of investigation and thus transformation (learning) occurs. Therefore the distinction between play and work in school contexts may be superfluous. Indeed, in the UK the Qualifications and Curriculum Authority (QCA) has suggested that learning at the Foundation Stage (three to five years of age) should be characterised by:

- opportunities for children to engage in activities planned by adults and also those that they plan or initiate themselves. Children do not make a distinction between ‘play’ and ‘work’ and neither should practitioners. Children need time to become engrossed, work in depth and complete activities (QCA, 2000, p. 11).

This is not a contemporary idea, but rather has been embedded in educational practices for some time. For example, over 40 years ago the Plowden Report on primary schooling in the UK acknowledged the connection between play, work and learning. They wrote: (paragraph 523, Department of Education and Science, 1967):

* Play is the central activity in all nursery schools and in many infant schools. This sometimes leads to accusations that children are wasting their time in school: they should be ‘working’. But this distinction between work and play is false, possibly throughout life, certainly in the primary school. Its essence lies in past notions of what is done in school hours (work) and what is done out of school (play). We know now that play - in the sense of ‘messing about’ either with material objects or with other children, and of creating fantasies - is vital to children's learning and therefore vital in school.

In the UK, the Curriculum Guidelines for the Foundation Stage of schooling exemplifies the traditional belief that young children learn best through play and recommends that planning a curriculum rich in play opportunities is fundamental to quality early years programs. The QCA (2000) contends that with play as the main form of learning, effective early education provides a context in which children are able to:

- explore, develop and represent learning experiences that help them make sense of the world
- practice, and build up ideas, concepts and skills
- learn how to control impulses and understand the need for rules
- be alone, alongside others or cooperate as they talk or rehearse their feelings
- take risks and make mistakes
- think creatively and imaginatively
- communicate with others as they investigate and solve problems, express fears or relive anxious experiences in controlled and safe situations.

Yet, a concise definition is not provided. Rather the assumption is that examples that imbue such components, constitute play. This seems to have been the view for some time. For example in 1995, Klugman described play as:

* ... a major interactive process through which children learn about themselves, their environment, the other people in that environment, and the interrelationships among all of these. Play is intrinsic, self-selected, active, mind involving, and a focus for personal powers. It is intriguing and captivating and frequently involves practice of needed mental and/or physical skills. Play engages and fulfills the player. Authentic play involves choice on the part of the player and can be self-perpetuating. Play takes a variety of forms. Some of these are exploratory, functional, constructive, symbolic, and games with rules (p. 196).

This seems to involve the majority of components in traditional conceptualisations of play that characterise pre-school contexts. It supports the view that creating opportunities for play involve providing resources and materials (e.g. puzzles, construction blocks (Duplo/Lego), activities (e.g. outdoor climbing frames, sand pits), centres (e.g. dress up, home corner), and space in the daily schedule so that children can choose between the various ‘play’ options. Teachers generally do not interfere with the choices that children make or direct them in any specific ways.

Accordingly, it is apparent that to simply state that ‘young children learn through play’ is problematic and misleading. This was also asserted by Bennett, Wood et al. (1977), who stated:

* A direct relationship between play and learning is assumed. Play is considered to be such an educationally powerful process that learning will occur spontaneously, even if an adult is not present. However, this central belief in the value of play to young children’s learning is not borne out by empirical evidence … (p. 1).
Young children might have fun while participating in such free play sessions and indeed they can be regarded as forming part of what constitutes ‘good’ programs, but it is also relevant to ask what type and kind of learning is taking place in these contexts? What connections are being made to the child’s lived experiences and knowledge building and how are these articulated and extended in supporting activities? It is contended here that quality learning environments support children’s learning with a rich variety of materials that enable them to explore and make discoveries. As part of this process teachers observe children and, based on their professional judgement and by talking with parents, plan accordingly. They are also able to intervene while children are investigating to ask questions, share ideas and extend the potential of the activity as well. This is the teacher as facilitator or enabler. This will occur not only with resources but also with ideas and questions. Drake (2005) has suggested that such support might include:

- stimulating children’s interest in the activity
- providing high-quality resources
- listening and responding to children’s talk
- questioning children in order to extend learning
- working alongside children, modelling skills and the use of key vocabulary
- encouraging, reassuring and praising children
- valuing and celebrating children’s achievements

In this way it becomes apparent that learning through play should involve more than teachers providing materials and time for young children to choose what they want to do. Teachers should consider a wide range of pedagogical factors like the ones suggested by Drake (2005) and beyond, so that young children are afforded experiences and opportunities for playful explorations that are both spontaneous and planned, and linked to learning outcomes in relevant and dynamic ways.

### Playful explorations

Here, I think such experiences can be encapsulated in a pedagogy of playful explorations. They are initiated by the child(ren) or the teacher and can be extended in multiple or specifically planned directions. They incorporate the use of new technologies. They are structured yet flexible. In many instances they can be linked to specified learning outcomes while in others they might make a contribution to more global aims for learning, like fostering creative thinking by enabling the children to generate diverse solutions or make suggestions for success. They extend beyond the preschool years into the early years of schooling. There are pedagogical challenges to consider in order to support such playful explorations. The fact that teachers can, and should design playful explorations in the first instance, or intervene to suggest new directions, might not align with the views of those who regard play as being initiated by the child, self-selected and voluntary, but the change in nomenclature from play to playful explorations is a deliberate one. It suggests a shift in emphasis with regard to being able to articulate learning outcomes as the result of creating these types of learning scenarios and incorporating adult participation and scaffolding.

Rethinking play as playful explorations in which experimentations and meaning-making is scaffolded and extended by a teacher has the potential to provide a much richer learning environment for young children. Further, the use of new technologies and the opportunities they create for meaning-making, extending communications and interactions are vital to such explorations.

Many young children come to preschool with a broad range of experiences and a high level of interest in using a variety of technologies, including computers, digital cameras, mp3 players, mobile phones and many hand-held devices. They have had time for playful explorations with them in the years before they participate in formal settings and learn how to use them specifically for a variety of purposes. In this way, new technologies become resources for them to create new things and share them with audiences beyond their immediate physical space.

Making new technologies available alongside traditional materials (e.g. blocks) enables and extends playful explorations. Further, they can be used to document learning scenarios that describe the types of learning that have occurred (Carr, 2001) and also shared with parents.

Traditionally, block play is an essential component of early childhood programs and is justified in terms of being an open-ended play activity in which the children learn (e.g. Hendrick and Weissman, 2006). Playing with blocks is thought to lead to learning about: the physical properties of objects, hand-eye coordination, cause and effect, object permanence, and specific concepts related to shape and gravity, for example. Block play is frequently cited as a free play activity that can provide contexts for planning, problem solving and posing, communication and collaborative skills for and between children. More specifically it is linked to learning early mathematical concepts, for example, matching, sorting, grouping and classification as well as those related to number and spatial understandings.

Empirical evidence based in research projects is hard to find; since most of the descriptions are anecdotal (see Bennett et al., 1977). There is no doubt that creating and designing constructions with blocks have the potential...
to provide a context for rich learning scenarios. Yelland, Lee, O’Rourke & Harrison (2008) described a young boy called George who had a propensity to design buildings with blocks as well as other construction materials (Figure 1). He created elaborate plans both in drawings and on the computer when supported by adults. George also used a digital camera in order to create a permanent record of his exquisite building adventures. The learning story of George and his block-building, reveals his advanced spatial knowledge and his ability to represent his ideas in both two and three dimensions. The following year as he entered the first year of school he extended his building with new materials (Duplo) to create a short animation (Figure 2), in which zoo animals move in time and space to form a group by a waterhole. Traditional ‘play advocates’ might criticise such learning as being too structured and organised by the teacher. However, when teachers interact with the children and focus on their capacity to demonstrate or articulate such skills and knowledge during block play, the case for playful explorations and links to specific learnings is made.

Changing contexts for learning

In fact opportunities like those provided for George in the scenario above are diminishing. In recent times we have witnessed a major shift for early childhood educators to become much more prescriptive in their teaching. This is apparent in an era where accountability and learning outcomes are viewed as being measurable commodities and individuals and schools can be easily compared. The rhetoric of No child left behind (US Dept. of Education) suggests that we need to make sure early in a child’s life that they have the required skills for reading, writing and mathematics that will guarantee success in school as well as prepare them for a life of employment. It is supported by governments who are keen to show their positive impact on educational performance in the easiest way possible, that is by improvements in test scores. They need and want to keep education quantifiable and accountable since it avoids complex discussions and consideration of the long-term goals for an education system that exists in new times that are radically different from those many politicians have experienced. Their view of literacy would be traditional in that it would be focused on the ability to read and write. Consequently, any play-based early childhood curriculum is under stress as academic tasks and prescribed basic tasks and activities become commonplace in kindergartens and earlier.

Paradoxically, the use of new technologies is discouraged by those who advocate traditional play-based curricula, and those who want standardisation and the practice of defined (industrial) basic skills via clearly constructed and limited tasks (see for example Alliance for Childhood (2004); Cordes & Miller (n.d)). The former group contends that children need to play in the real world, with actual objects and in materials that are tactile and tangible, with minimum intervention by the teacher. The belief is that with these artifacts the children can embark on make believe and free play in a variety of
contexts and thus learn. Adherents contrast this to the abstract, symbolic and supposedly, addictive range of new technologies that they contend take children away from ‘real life’ and inhibit the development of positive social skills. Similarly, the second group defines ‘basic skills’ as being from a pre-technological era and maintain that such heritage skills are fundamental and not to be replaced by equivalent or new skills derived from the technological era. Handwriting lessons are perpetuated, books are privileged in preference to digital texts for sourcing information, and calculators are banned from mathematics classes.

In playful explorations not only are new technologies part of a repertoire of experiences for young children’s learning but the teacher is able to scaffold this learning so that it is articulated and represented by the children in a variety of modes. In this way playful explorations provide evidence of children’s multimodal learning and encourage the use of a variety of media and resources that are part of this learning as well as being artifacts of the learning process. This requires a rethinking of the literacy that is required as a basic skill to a new conceptualisation of multiliteracies which are fundamental to social and personal futures for all citizens.
Multimodal experiences combine the written, visual, gestural, aural, linguistic and the tactile. Multimodal texts mix these components to varying degrees depending on the message that the author wants to convey or leave open to interpretation. Children experience such texts on a daily basis in their lives and enjoy designing and creating their own.

As previously stated, young children come to early childhood settings with a range of experiences with new media. Yelland et al., (2008) have noted that ‘Their lives are digital and they communicate in a variety of modes with myriad materials that are made of bits and bytes’ (p. 1). Parents of these young children report (Rideout, Roberts and Foehr 2005) that 48% had a video game and 63% lived in homes that had access to the internet. They also spent about two hours a day using screen media. Interestingly they spent about the same amount of time playing outside, and this was three times more than they spent reading books or being read to. In fact the findings of their most recent report (Rideout, Foehr, and Roberts, 2010) revealed that ‘Eight to eighteen

Figure 3: Maths trails
year olds spend more time with media than in any other activity ... an average of more than 7.5 hours a day, seven days a week’ (p. 1). This was an increase of one hour a day from their previous report five years prior to this survey. It represents a greater amount of time than many adults spend in full-time employment, and they do it seven days a week not for five days.

Children are not passive consumers of media. They self-select media content (e.g. favourite TV shows, DVDs and music) and mostly initiate the activity. They are truly new millennial kids and live in a multimodal world where the impact of new technologies is significant and ubiquitous.

**Becoming multiliterate … playfully**

Traditionally, literacy in schools has focused on reading, writing, listening and speaking. However, it is now apparent that we need to reconceptualise literacy as a ‘malleable repertoire of practices’ (Luke, 2006, p xii). In the twenty-first century information and communications technologies have extended our capacity to be literate in many more forms and modalities. The linking of visual, aural, spatial, gestural and linguistic modes of communication needs to be made explicit and applied in school contexts. The pedagogy of multiliteracies (New London Group, 1996) supported a view of literacy practices that were based in the social and engaged children in learning with different modalities. Kress (1997) also noted that the major forms of public communication focus more on the visual than the linguistic. Accordingly, we should recognise the funds of knowledge (Moll, Amanti et al. 1992) that young children bring to educational contexts since the use of new technologies is an integral part of this.

Living in a multimodal world enables us to link the use of new technologies with our experiences in the ‘real’ world. Thinking in this way facilitates playful explorations and enables the young child to build representations and form new understandings. Traditionally, (three-dimensional) play has been viewed as laying the foundation for later abstract or symbolic thought. Research on multimodal learning (e.g. Kress, 1997; Pahl & Rowsell, 2005; Yelland et al., 2008) has given us new insights into the complex ways in which children are able to link modes and how they can do this simultaneously in contexts that involve the use of new technologies. If this is established in the preschool years then learning in primary school can extend it, and open up new possibilities. When George (from Figure 1) went to primary school he was fluent in a variety of modes (linguistic, spatial/visual, kinesthetic written, gestural, and aural). This was clearly evident, for example, in his block-building, the plans he made from them, the talks he gave about them, the labels he used for the diagrams, and the photographs he took of them. He was quickly able to incorporate new technologies into his storytelling and collaborate in a small group to produce the zoo animals Lego animation, previously described (see Figure 2). Schools that believe in this approach, as well as having new technologies available for children, are able to link gardening activities, for example, to classroom-based inquiries that record the growth of plants and develop ideas about organic foods and how to minimise pollution, or design new garden spaces (Figure 3). In these playful explorations the documented work is only part of the learning experience. It represents the culmination of the events and can be linked to specific learning outcomes that are required by mandated curricula or negotiated and agreed upon by teacher and learner. Similarly, a playful explorations approach can be built into investigations of specific mathematical concept-building in a maths trail in the local environment (Figure 4). In both of these examples the figures show one dimension of the work with different modalities that incorporated visual/spatial, gestural, aural, tactile and linguistic.

In the UK the Statutory Framework for the Early Years (DCSF, 2008) documentation states that children should engage in experiences that enable them to, ‘ ... express their ideas through a wide range of types of representation’ (p. 96). Kress (1997) also noted that we need to understand the ways in which young children make meanings in a variety of contexts as they are playing as a basis for supporting their literacy development which becomes essential in the early years of schooling.

The use of new technologies is an integral part of becoming multiliterate in the twenty-first century. Children can use digital cameras in playful explorations which enable them to create multimodal texts to represent their ideas and understandings. They can use the photographs to make digital stories or podcasts. Their use can also provide opportunities to document and create a narrative of their own playful explorations in their preschool centre.

In initial explorations with digital cameras young children love to take photos of their friends in the group and these can act as a catalyst for extending language opportunities (Yelland & Leung, 2009; Yelland et al., 2008). The logistics of using a digital camera can be unstructured and the children can take them on excursions to document the visit. Using a movie camera is harder for young children since they are generally not designed to be carried by one small hand. The new Flip Video cameras are ideal for introducing very young children to the notion of capturing actions and events on camera. An initial starting idea might be to make a visual diary of the centre identifying key locations and showing the viewer classmates. Making
a video recording of an excursion is also exciting for young children. Additionally, it might also be possible for the children and a parent to take the camera home. Then a link is established between home and school in a tangible way and the choice of what will be filmed is a shared experience between parent and child.

As previously stated, by the time preschoolers, who are fluent in the use of digital cameras and computers, come to school they are able to create multimodal texts for a variety of purposes. One of the most popular is podcasting. I have observed children in their first year of school (five years) make podcasts about their swimming sports day so they could share it with those parents who were not able to attend. The advantage of using new technologies for digital stories in the early years of school is that the children are able to create extended narratives that are not hindered by their capacity to write a story with a pencil. This is very exciting for them and means that they are able to explore topics and share their findings in appropriate ways with their peer group, using a variety of modalities. This means that they are not restricted in their expression of ideas to one mode and also that they are able to understand how things work in a variety of ways. It is also how the world works in the twenty-first century, how things are presented and represented to them via new technologies and traditional ones that they experience on a daily basis.

Summary

In thinking how we might reconceptualise play, and make explicit claims to learning in planned and spontaneous activities, we need to go beyond just making statements that play is inherently and automatically linked to learning. The traditional view that this is a reciprocal relationship is too simplistic and indeed not supported by the empirical evidence that contemporary research agendas require. It is contended here that playful explorations that are supported by new media and interactions with adults/teachers provide contexts for dynamic opportunities for teaching and learning in the early years. One important consideration regarding the learning of young children has become apparent. We need to provide contexts so that young children are exposed to different modes of representations which in turn afford them the opportunity to formulate new understandings about their world and make meanings about ideas and concepts on the basis of their experiences.

I have previously claimed (e.g. Yelland, 2007) that the challenge for parents and educators is to maintain a balance between the real and virtual worlds. Both are relevant to the lives of young children and can support learning in structured and unstructured ways. Parents have often expressed the concern that if they let their children play with computers and other new technologies this will take away from their ‘real’ world experiences. It is up to them to ensure that this does not occur. Children should be given opportunities to self-select, but parents and other adults should be able to encourage diverse contexts for playful explorations that give them a range of learning opportunities with a variety of materials. Often it would seem that parents think that because they have purchased a toy or software their child will spontaneously want to play with it without adult intervention. This may be the case, but it is also evident that the new toy can be a shared learning context in which parents or other adults can interact with the child, with a variety of positive outcomes emanating from the conversations. For example, an adult can provide the context to broaden the language/vocabulary base of the child as well as by asking probing questions which will facilitate the learning of specific concepts and hopefully enable the child to make the appropriate abstractions which lead to higher levels of thinking and knowing.

The examples provided here were designed to encapsulate the notion of playful explorations to illustrate the ways in which learning can occur when engagement with ideas, (multimodal) resources and people takes place. New technologies provide scenarios that are very appealing to children and have the potential to broaden the range of play experiences. They can act as a catalyst for interactions, either with another child or with adults, enabling children to make connections between representations. This in turn facilitates greater in-depth understandings about concepts and experiences. Children’s use of new technologies including computers, cameras, ipods, mp3 players and the range of electronic toys will continue to be extended and they will bring these experiences to preschools and schools. This will impact on the ways in which they will want to explore and use what is available in the centre or classroom and educators should take this into consideration when planning learning activities. The resources and playthings that children have prior to coming to school and in after-school activities are becoming increasingly influential in shaping what they are able to do. As these become more sophisticated the gap between what is available in school and out of it is widening, and schools are in danger of becoming irrelevant if they don’t connect with the experiences and materials that are available to children in their daily lives.

Playful explorations can be supported by adults and extended in new scenarios and investigations depending on what children show interest in. These new play-worlds afford contexts in which young children can not only gain conceptual understandings but also think more deeply about identities and how to interact with each other. This type of learning complements and extends three-dimensional playful
explorations. Teachers enable and support children’s meaning making with interactions and resources that encourage them to make connections between the different modes of representations. It is interesting to note that in one such play-world called Panwapa, 27,188 members chose computers as their favourite activity. Next, came art (6514) origami (4794) and then fishing (4743). This should tell us a bit about what children like doing. The question is how do we recognise this and incorporate it into our pedagogical repertoires?

References


Observing young children’s rough-and-tumble play

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THIS RESEARCH INVESTIGATED THE rough-and-tumble play of 17 five-year-old children in two early childhood settings. The study resulted in an increased understanding of the forms of rough-and-tumble play displayed by young children. This study demonstrates that both boys and girls are engaged in a variety of rough-and-tumble play behaviours.

Twenty-seven distinct rough-and-tumble play behaviours were exhibited during the observation period. They included eight components identified as rough-and-tumble play in previous research and also 19 behaviours not previously identified as elements of such. These elements indicate pre-operational forms of rough-and-tumble play. The results of this study have implications for the understanding of child development. It suggests that rough-and-tumble play evolves as children age; that children move into more complex play behaviours as they mature.

INTRODUCTION

According to Pellegrini and Smith (1998), rough-and-tumble play includes, ‘running, climbing, chasing, and play fighting’ (p. 577). From this categorisation of the play, the elements of rough-and-tumble play have been further defined by Reed and Brown (2000) to include fleeing, wrestling, falling and open-handed slaps.

One common element of recent descriptions and definitions of rough-and-tumble play is the inclusion of a ‘play face’ where participants are smiling and laughing (Reed & Brown, 2000). This play face is an important characteristic as it distinguishes rough-and-tumble play from aggression. According to Reed and Brown (2000), and supported by DiPietro (1981), aggressive behaviour involves anger and a determination to cause harm to another, unlike the playful nature of rough-and-tumble play.

This study identified forms of rough-and-tumble play exhibited by young children. The specific questions for this study were to what degree, and in what forms, is rough-and-tumble play being engaged in by young children enrolled in daycare programs. Daycare programs were selected for use because children attend for a full day, providing consistency of participants for morning and afternoon observations.

Is rough-and-tumble play really play?

Rough-and-tumble behaviours are considered to be play behaviour (Pellegrini & Smith, 1998; Reed & Brown, 2000) and yet are also at times referred to as non-play behaviour. As stated by McCune (1998), ‘play has been difficult to define because it occurs as an aspect of many activities rather than being limited to a specific kind of activity; thus it rarely occurs in isolation’ (p. 601).

Rough-and-tumble play has not yet been accepted universally as a form of play, although research appears to support its inclusion as such (McBride-Chang & Jacklin, 1993; Reed, 2005). Further, the identification of rough-and-tumble play as behaviour manifested cross-culturally (for example, Jarvis, 2007) supports its inclusion as a form of play. However, Pellegrini and Smith (1998) highlight the need for research on physical activity play. Specifically, ‘there is a need for more descriptive data on the forms of physical activity play and their age trends through childhood and adolescence’ (p. 589).

Rough-and-tumble play is a relatively new area of exploration. Previous research on such play by children involved the utilisation of interviews, observations, and videotaping of rough-and-tumble play events. While video recordings have been utilised in other studies (for
example Flanders, Leo, Paquette, Pihl & Seguin, 2009; Reed & Brown, 2000), an observation sheet was chosen over the use of videotaping in this study because it was less intrusive in the participants’ activities.

**Rough-and-tumble play**

The history of scholarly interest in the play of preschool-aged children has addressed general and specific areas of interest, such as gender differences (for example, Evans, 1998); creativity (for example, Singer & Singer, 1985); pretend play (for example, Paley, 1988), and play group entry techniques (for example, Trawick-Smith, 1988). While each of these topics contributes to our understanding of the social nature of play, there is much to describe to understand fully every aspect and element of play.

Within early childhood settings, children engage in a wide variety of play. Sutton-Smith and Rosenberg (1982) examined the popularity of children's games over a 60-year period from 1898 to 1959. The results of their review indicate that one continuously popular game throughout this period was the physical game of wrestling. The physical nature of play has been explored in research, primarily in terms of aggression (Goldstein, 2005). Similar cognitive implications have been identified in additional research (for example, Flanders, Leo, Paquette, Pihl & Seguin, 2009; Reed & Brown, 2000). There is a need to understand the rough-and-tumble play behaviours of both boys and girls (Reed, 2005).

Most studies on the rough-and-tumble play of school-aged children have involved gathering the thoughts of boys engaging in such play. There appears to be a gap in the research literature on the parents’ perspectives regarding such play. Equally, as young children may be in the care of educators, there is a need to understand how early childhood educators interpret and respond to rough-and-tumble play. The thoughts of each of these interest groups are in need of exploration in order to better understand how different interest groups interpret and support, or restrict, the rough-and-tumble play of children.

**Piaget's developmental stages and rough-and-tumble play**

Piaget (1951) identified the importance of play in the cognitive development of children. He recognised that, while the confines of cognitive abilities of young children limit the extent of play, play serves as a medium for practising those skills that have been learned. This process of cognitive development, for young children, is defined in specific stages of development, identified as sensori-motor, preoperational, and concrete operational (Piaget, 1951).

The five-year-old children participating in this study would, according to Piaget, be in the preoperational stages of cognitive development (Piaget, 1951). Within his theory, Piaget identified that, during the preoperational stage of play, children are practising skills that will become elements of their concrete operational play. This concrete operational play leads to the development of games with rules. Pellegrini, Dupuis and Smith (2007) further support Piaget’s theory by stressing the importance of practical experience through play in young children's cognitive development. Gaining a cognitive understanding of social systems through play serves to provide many practical experiences which enhance learning, including developing an understanding of social rules, social expectations and logical thinking.

**Methodology**

This study was conducted in two daycare centres in Western Canada. Daycare centres were chosen over preschools or other early childhood programs owing to the length of time and consistency that children are exposed to one another. Previous research on older children (that is, Reed and Brown, 2000; Pellegrini & Smith, 1998) highlighted the social connections demonstrated between rough-and-tumble play partners. The use of daycare settings in this study...
most closely replicated this opportunity for established friendships, given the extended period children spend together. While children in preschool programs typically attend for four to six hours per week, those attending daycare programs are in care for longer, typically 35 to 50 hours per week.

The participants in this study included six educators and 17 children from two settings. The six educators were qualified early childhood educators. Qualified educators are licensed by the Province of British Columbia after completing a 10-month training program focused on early childhood development, curriculum planning, and contextual issues such as health, safety, and working with families. The allocation of the participants at each setting is displayed in Table 1. Through the duration of this study, no participants withdrew or were otherwise unavailable to complete their participation in the data collection process. The participating educators were those who typically supervise the participating children.

Setting 1 was a privately owned and operated licensed centre situated in the lower level of a family home in a middle-income residential neighbourhood. The setting was licensed to care for up to 16 children aged 30 months to school age. This first setting employed four regular full-time early childhood educators, all female. Setting 2 was a licensed early childhood setting operating as an independent, non-profit organisation. The setting was situated in a purpose-built facility in proximity to government offices. It was licensed for up to 24 children aged 30 months to school age, and employed four regular full-time early childhood educators, three female and one male.

Table 1: Allocation of participants in each setting

<table>
<thead>
<tr>
<th></th>
<th>Setting 1</th>
<th>Setting 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Children</td>
<td>9</td>
<td>8</td>
</tr>
</tbody>
</table>

Observations

A total of 10 x 90-minute (900 minutes) observations was made of the daily activities of the participants in their setting. Observations of each setting occurred at different times of the day and on a variety of days, allowing each setting to be viewed under a variety of circumstances. Each participating setting was observed during daily routines, structured activities, transitions, and free-play time. Free-play experiences are those in which children at play have the opportunity to make choices in determining their activity. Essa (2011) recognised that most early childhood programs have time allotted for children to make activity choices and engage in free play. Free play was of particular interest, based on the work of Smith and Connolly (1980). They noted that the frequency of rough-and-tumble play in preschool settings was greater during free-play sessions.

Criteria for inclusion of rough-and-tumble play

Commonly recognised rough-and-tumble play behaviours within current literature were adopted by me, as the researcher in this study, to form the basis of the criteria for identification of play as rough-and-tumble. Children who displayed acts involving running, climbing, chasing, play-fighting, fleeing, wrestling, falling, and open-handed slaps (Pellegrini & Smith, 1998; Reed & Brown, 2000) were considered to be engaging in rough-and-tumble play. The criterion utilised in distinguishing these types of behaviours as play and not aggression involved the display of the cheerful play face (Reed & Brown, 2000).

Routine observations

Most early childhood programs tend to follow somewhat predictable routines. The researcher had observed daily routines in several settings and recognised that the typical daily routine was commonly applied across settings. The observations for this study encompassed the following typical daily routines: (1) arrival and free play of children during the early morning, (2) snack and circle times during the morning, (3) lunch and nap times in the middle of the day, (4) afternoon activity and play times, and (5) departure and free play during the late afternoon.

Each of the identified elements, or daily experiences, for both settings were observed twice. Only one predominant activity (for example, morning arrival and free play, lunch and nap, etc.) was observed within either setting on any single day. Setting 1 was observed for a total of 15 hours while Setting 2 was observed for a total of 15 hours and 25 minutes. Both settings were observed 10 times over five weeks.

Recording behaviours

The observations focused on incidents of rough-and-tumble play as displayed by the participating children. The observation of this form of play holds some inherent difficulties. Because uniform descriptors of this form of play have not been explicated, there is no uniform assessment tool. Given the descriptors by Pellegrini and Smith (1998), and Reed and Brown (2000), a uniform method for the assessment of rough-and-tumble play can be developed. However, utilising the descriptors provided through previous research provided only a starting point. Several are general in their form (that is, wrestling and play-fighting) and require observers to be aware of individual components which form larger play behaviour. For example, play-fighting can include hitting, kicking, rolling on the ground, grabbing, and lifting a player. Separate observation sheets were used for each incident of rough-and-tumble play observed.
They detailed the setting, date, time and place (indoor or outdoor) of the observation. Recordings of the children’s behaviour included comments made by the children and behaviours directly observed by the researcher.

Recorded behaviours and comments of the participating children were reviewed by three trained observers at each site, two of whom were classroom teachers of participating children and the third the primary researcher for this study. Classroom teachers at each site were trained on recognition of rough-and-tumble play and the recording of such play. Inter-rater reliability of recorded behaviours was 95 per cent, as determined by practice sessions.

**Participant identification coding system**

For this study, coding was utilised in an effort to clearly identify each individual participant and the behaviours observed. The settings were identified as Setting 1 and Setting 2. The participant roles were identified as ‘E’ for educators and ‘C’ for children. Individual participants were identified by two separate methods. The educators were identified numerically and children were identified with individual capital letters. For example, the second educator from Setting 1 was coded as 1:E:2. Similarly, a child from Setting 1 was identified as 1:C:F. The analysis of the observations involved the categorisation and frequency counts of behaviours observed.

**Results**

**Observed rough-and-tumble play behaviours**

A total of 116 demonstrations of rough-and-tumble play behaviours was recorded during the duration of this study (refer to Table 2).

**Table 2: Observed rough-and-tumble play behaviours**

<table>
<thead>
<tr>
<th>Description of behaviour</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grabbing body of other player</td>
<td>16</td>
</tr>
<tr>
<td>Use of voice ~ roaring</td>
<td>11</td>
</tr>
<tr>
<td>Chasing (e.g., in pursuit of other player)</td>
<td>11</td>
</tr>
<tr>
<td>Grabbing and moving body of other player</td>
<td>7</td>
</tr>
<tr>
<td>Falling</td>
<td>6</td>
</tr>
<tr>
<td>Banging body into body of other player</td>
<td>5</td>
</tr>
<tr>
<td>Hitting motions</td>
<td>5</td>
</tr>
<tr>
<td>Kicking motions</td>
<td>5</td>
</tr>
<tr>
<td>Rolling around on ground with other player</td>
<td>5</td>
</tr>
</tbody>
</table>

The recorded behaviours were grouped into three categories that had common actions: (1) physical contact between players, (2) play behaviours in which an object is an instrumental component, and (3) independent physical play behaviours (see Figure 1).
Physical contact between players

Each of the behaviours within the first category involved direct physical contact between players. This category included the most commonly and least commonly observed behaviours during this study. As indicated in Table 2, the most commonly observed rough-and-tumble play behaviour was when one player grabbed the body of another. For example, at Setting 2, 'U' (a boy) grabbed 'W' (a girl) around the waist from behind and proceeded to lift 'W' up off the ground before setting her back down. Both children involved in the play were displaying the play face as they laughed through the event (2:O:2–2).

Wrestling

Even though the child participants routinely described rough-and-tumble play as wrestling, only one incident of wrestling was observed (see Table 2). Wrestling is defined in this study as the display of several rough-and-tumble play behaviours with a peer (for example, lifting the body of another, rolling around on the ground, grabbing another, pushing, running, falling, banging bodies) in a single incident. This incident of rough-and-tumble play resulted in the educator responding, 'That's way too rough!' Both children then stopped their play, grinned at one another, and ran to the climber together. This display of the wrestling sequence combined several rough-and-tumble play behaviours into a sequence.

Physical contact

The physical contact with another rough-and-tumble player included children banging their bodies into one another. At times, the children would incorporate rolling movements into their play. Typically, rolling around on the ground was an element of conjoined play behaviours. The children did not roll around independently of other rough-and-tumble play behaviours. For example, at Setting 2 three boys banged into one another and the walls as they danced. After banging into the wall or each other they would fall down and roll on the floor before getting up and repeating the play sequence (2:O:6–3).

Children were observed pushing and pulling one another with hands and feet. Holding hands was also displayed, as when children held hands while dancing, running, or pulling one another.

The physical contact between children during rough-and-tumble play included open-handed slaps. At Setting 2, three boys (R, V, and U) engaged in a game of 'leapfrog with a hit' (2:O:7–5). During this game one child curled himself into a ball shape while the other two children jumped over him, giving him an open-handed slap as they did so. The children took turns in the two roles.

Rough-and-tumble play behaviours with an object

The second category involves those play behaviours in which an object is an instrumental component. The most common rough-and-tumble play behaviour observed within this category was jumping on an object. At Setting 1, B (boy) would jump onto and off the couch in the book area of the playroom (1:O:3–2).

The next most common play behaviour involving an object was kicking a ball or bucket or other objects on the playground. While the most common play behaviour with objects involved kicking, the children would also throw objects. At Setting 2 the children who were kicking a bucket also picked up the bucket and threw it towards one another (2:O:7–1). At times the children would make crashing motions with a held object. This was observed at Setting 2 when two boys indoors at the car play area were crashing toy cars into the floor as they made sounds like ‘wahh’ (2:O:6–1). The play at times involved using an object to hit another player. An example occurred at Setting 1 when B and D were in the library area. Both children had books in their hands as one sat on a chair and the other on a couch. They would take turns hitting one another with the books while laughing (1:O:8–4).

Independent physical play behaviours

The third category is independent physical play behaviours, including making hitting motions, running, making large body motions, hitting self, rolling around on the ground, roaring, and using a loud voice. Roaring was the second most common behavioural display, with 11 observed occurrences. An example of the use of a roar was observed at Setting 1. F and B were sitting side-by-side at a table at the end of morning snack time. B held F’s forearms down, then roared at F and F roared back. Both children then laughed before leaving the table (1:O:1–2). These roars sounded similar to a roar that might be made by a large animal, such as a lion. The use of a roar in the rough-and-tumble play sequences was distinct from the use of a loud voice, as the roar appeared to be in imitation of an animal sound while the loud voice often involved yelling as though to call another player.

The children participating in rough-and-tumble play used a loud voice on two occasions. On one occasion the children were riding scooters indoors while bumping into one another and crashing into furniture and walls. As they crashed their scooters, they used loud voices when communicating with one another (1:O:1–1).

As well as a loud voice, the children also utilised large body motions as they twirled with arms outstretched as though to make their bodies fill as much space as possible. The large body motion was recognised when children made large arm movements (arms outstretched) while also making large leg movements. For example,
at Setting 2, Q, S, and V were ‘dancing’, with their arms and legs making grand motions (2:O:6–3). At Setting 1, B jumped up into the air while twisting his body with arms and legs swinging wide and fast (1:O:7–3).

The display of hitting motions was classified as an independent behaviour. On one occasion at Setting 2, R and V were making karate motions without any physical contact with one another. They used their feet and hands as they kicked and made karate chops towards one another (2:O:7–4).

On two occasions children were observed hitting themselves as part of their rough-and-tumble play. However, this play behaviour was observed only at Setting 1 where, for example, a child used his hands to hit his own head while a second child watched and copied the action (1:O:4–2).

Falling was an element of rough-and-tumble play displayed at both settings. Children were observed falling as part of play patterns, such as falling before rolling around on the floor (2:O:6–3). At Setting 1, a child with a cape around his shoulders would roll around on the ground after jumping off a bench (1:O:6–1). This demonstration could also be considered within the context of imaginative play. Indeed, rough-and-tumble play is often included in discussions of superhero play as children enter into role-play (Colwell & Lindsey, 2005).

One rough-and-tumble play behaviour observed regularly at both settings was running. While running is displayed in a variety of children’s activities, including games with rules, it has also been consistently included within research as an element of rough-and-tumble play. Children would run to or from play areas when transitioning between activities (2:O:3–6, 1:O:2–1, 1:O:3–1). The children would also utilise running as a part of their play, as demonstrated when children ran together across the playground with their arms outstretched as though imitating airplanes (2:O:7–5).

As noted in Table 2, the children engaged in chasing behaviours. In each case observed, the children ran as they chased one another. At Setting 2, children would chase one another while outdoors in the playground (2:O:5–2, 2:O:7–1, 2:O:7–5).

Fleeing behaviours were observed once. At Setting 2, a child was following another child in the indoor playroom. V was darting and weaving amongst the toys and shelves as Q followed, making grasping motions at V with his hands. After a moment of fleeing, V stopped moving and with a change of facial expression from playful to serious, said ‘Stop!’ Q continued to follow V when V said, ‘Stop, I don’t like that’ (2:O:3–2). At this point Q stopped following V.

The link between rough-and-tumble play and anger or aggression was an articulated concern for both parents and educators. However, through the 30.25 hours of observation, the sequence noted above involved the only display of anger by one child towards another that was observed during this study.

Gender and rough-and-tumble play

Both boys and girls engaged in rough-and-tumble play, although boys accounted for 79.5 per cent of all observed incidents while girls accounted for 20.5 per cent. The most that one boy engaged in some form of rough-and-tumble play was 21 times, while the least that one boy participated was six times. For the girls, the most was six times, while the least was two. The average number of rough-and-tumble play events by the boys in this study was 10. The average number for girls was four.

There were differences in the type of rough-and-tumble play that boys and girls engaged in. One noted difference was in the display of wrestling. The players were both boys. The boys engaged in all forms of rough-and-tumble play (see Table 2). The girls engaged in rough-and-tumble play that was less intrusive of other players. For example, while girls would chase, fall, roll on the ground and hold hands, they were not observed grabbing and moving the body of another player or wrestling. Not only do girls participate in rough-and-tumble play to a lesser extent than boys, they also engage in somewhat less physically intrusive forms of the play.

Indoor and outdoor rough-and-tumble play

The observations in Setting 1 resulted in a total of 67 incidents of rough-and-tumble play behaviour during 29 play sequences. In Setting 2 a total of 65 incidents of rough-and-tumble play behaviour during 29 play sequences were observed. For Setting 1, 15 of the play sequences occurred indoors, with the remaining 14 sequences occurring outside. In Setting 2, nine of the play sequences occurred indoors and 20 sequences occurred outside. On average, in a one-hour period, 3.63 incidents of rough-and-tumble play were observed.

Implications

Gender and rough-and-tumble play

Educators reported that, while girls will engage in rough-and-tumble play, it is mostly the boys who participate in such play. This was congruent with the data collected during the observation portion of this study. For the participating children, boys accounted for 79.5 per cent of all rough-and-tumble play sequences and girls for 20.5 per cent. This supports previous research (Pellegrini & Smith, 1998; Monghan-Nourot, 1997; DiPietro, 1981) which identified gender differences in the display of rough-and-tumble play.

Based on the data collected as a part of this study, it appears that girls display fewer rough-and-tumble play sequences occurring indoors and that boys are more likely to engage in rough-and-tumble play that is more intrusively displayed towards other children.
play behaviours than do boys. Boys engaged in every rough-and-tumble play behaviour recorded (see Table 2) during this study. However, girls engaged in only 52 per cent (14 of 27). The notable absences from girls’ rough-and-tumble play behaviours included banging into another player, making hitting motions, throwing objects, pulling other players, crashing body into an object, and wrestling.

**Display of the play face**

The display of the play face (Reed & Brown, 2000) was the most common element within the rough-and-tumble play observed within this study. The children in all incidents of such play were displaying the play face of a cheerful expression. Some children would laugh and smile when engaging in the play events observed as part of this study.

**Rough-and-tumble play elements**

Throughout the study, no displays of play-fighting involving physical contact were observed. Elements of fighting behaviours were observed, including making kicking motions and hitting motions; however, there was no direct physical contact between players. Climbing was not recorded as an element of rough-and-tumble play within this study. The climbing opportunities were limited to the use of composite structures in the outdoor play space. The children participating in this study used these structures on a limited basis, although they had access to the structure for the duration of their outdoor play time (approximately 90 minutes in the morning and 90 minutes in the afternoon).

Excluding climbing and play-fighting, each of the play behaviours described by Pellegrini and Smith (1998) and by Reed and Brown (2000) were observed during the course of this study. In addition, unlike previous research, 21 supplementary rough-and-tumble play behaviours were observed. As Jarvis (2007) recognised, rough-and-tumble play components are emerging through current research. ‘Researchers have tried to study R&T as a complex and composite behaviour, incorporating some elements of social exercise play (for example, chasing) and some elements of play fighting (for example, wrestling)’ (Jarvis, 2007, p. 173). These behaviours were: grabbing the body of another player, grabbing and moving the body of another player, pushing another player, pulling another player, banging their body into the body of another player, banging their body into a fixed object, rolling on the ground with another player, rolling around on the ground on their own, holding hands, use of a loud voice, use of the voice as a roar, making hitting motions, making hitting motions while holding an object, hitting oneself, making large body motions, jumping on an object, kicking an object, throwing an object, crashing their body into an object, and making crashing motions with a held object.

**Preoperational stage of rough-and-tumble play?**

Given that the young children participating in this study displayed rough-and-tumble play behaviours not identified in previous studies involving school-aged children, it may be that rough-and-tumble play is an evolving form of play. It may be that children move into more, or less, complex rough-and-tumble play behaviours as they mature. It might be that, although the young children observed as part of this study exhibit some elements of more sophisticated rough-and-tumble play, sophistication of the play has yet to be developed.

It may be that the children observed by Reed and Brown (2000) engaging in more sophisticated rough-and-tumble play games with rules were, at a younger age, displaying less sophisticated play behaviours similar to the younger children in this study. It might also be that the young children observed in less sophisticated rough-and-tumble play in early childhood settings will be displaying more sophisticated play with rules when they are older. The study by Reed and Brown describes a game called ‘Smear’ which seven boys aged six to nine years had developed. These boys had created a rough-and-tumble game with defined rules, which is representative of Piaget’s concrete operations stage of cognitive development.

The results of this study indicate that children are exhibiting a preoperational level of play which, given a year or two, would arguably develop into the concrete operational stage of rough-and-tumble play identified in the study by Reed and Brown (2000). This finding is of importance for early childhood educators seeking understanding of the behaviours of children in their care. If the rough-and-tumble play components can be recognised and viewed within a developmental framework, educators may be able to more effectively plan for the inclusion of the play.

A longitudinal study of rough-and-tumble players might answer the question of how such play evolves over time. While Pellegrini (1991) conducted a longitudinal study, the focus was on the rough-and-tumble play of popular and rejected children. The observation of a cohort of boys and girls as they move through early childhood settings and elementary school environments would serve to provide an understanding of how rough-and-tumble play develops and changes with children’s growth and development.

**Conclusion**

The research presented in this article serves as a foundation for an increased understanding of the forms of rough-and-tumble play displayed by young children. As demonstrated, rough-and-tumble play behaviours can be categorised into a typology of play styles,
including physical contact between players, use of an object during rough-and-tumble play, and independent play behaviours within a Piagetian framework. The results provide educators with an organisational awareness of young children's rough-and-tumble play as they seek to more effectively interpret and manage the play.

References


Introduction

As children develop, their play becomes more flexible and creative. It evolves from the exploration of the sensory properties of objects to simple repetitive play, to relational and constructive play with objects, to functional play, and finally to play that is symbolic in nature (Jordan, 2003; Piaget, 1962; Smilansky, 1968). In the study reported here, we explored the possibility that the emergence of symbolic play is related to the development of executive functions, which may account for its increasingly creative and flexible nature.

Symbolic play is often defined as children’s deliberate distortion of reality in play when they act ‘as if something is the case when it is not’ (Leslie, 1987, p. 413; see also Fein, 1981; Jarrold, Boucher & Smith, 1993). Leslie (1987) contended that there are three fundamental forms: the substitution of one object for another, the attribution of absent/false properties, and the imagination of absent objects. However, it is generally accepted that this description is too narrow and that symbolic play can also involve the attribution of animacy (Jefree & McConkey, 1976; Lillard, 1993; Watson & Fisher, 1977), and role-play (Brown, Prescott, Rickards & Patterson, 1997).

Symbolic play typically emerges during the second year of life. Its frequency appears to be greatest during the late preschool years and begins to decline at around age six years (Fein, 1981). The ability to pretend gradually shifts from using the self as the agent to using another object (e.g. a doll) or person as the agent of the play. This has been called decentration (e.g. Fenson & Ramsay, 1980; Lovve, 1975; Watson & Fisher, 1977). In addition, the child becomes more and more able to use objects that are perceptually and/or functionally dissimilar to the objects they are meant to represent in play sequences (Fenson & Ramsay, 1980; 1981; Nicolich, 1977). Harris (1993) has argued that this gradual progression in deliberate distortion of reality indicates that the child shifts from habitual responses that are driven by external physical reality to internally generated flexible and planned actions. The child correctly perceives the actual situation but pretends that a different reality exists and can discriminate between the two (Leslie, 1987).

This shift is likely to involve the development of executive functions, which is a broad term used to describe a set of self-regulatory abilities necessary for problem solving or the conscious control of thought and action (Hughes, 2002; Isquith, Crawford, Andrews Espy & Gioia, 2005; Turner, 1999; Welsh & Pennington, 1988; Zelazo & Müller, 2002; Zelazo, Müller, Frye & Marcovitch, 2003). Hughes, Russell and Robbins (1994) have described executive functions as ‘mental operations which enable the individual..."
to disengage from the immediate context in order to guide behaviour by reference to mental models or future goals’ (p. 477). These operations are especially critical in situations when a habitual response is inappropriate or undesirable (Turner, 1999).

Abilities such as planning ahead, working memory, inhibitory control, set-shifting and attentional flexibility are generally thought to be part of the set of executive functions, but some authors have also included the generation of novel ideas or behaviours, or generativity (Bishop & Norbury, 2005; Hill, 2004; Jarrold, Boucher & Smith, 1993; 1996; Turner, 1997; 1999). As Jarrold et al. (1996) have argued, generativity and inhibitory control seem to be mirror images of each other: when one response has to be inhibited, an alternative one usually has to be generated. Furthermore, Turner (1999) believes the capacity to generate new ideas or lines of behaviour is critical for executive control of spontaneous, volitional behavior, one example of which is symbolic play. However, to date there is no clear indication as to which executive functions may be involved in symbolic play, and little is yet known about how individual differences in executive function development relate to the onset and elaboration of symbolic play in typically developing children.

There is evidence that different executive functions emerge at different ages and their emergence seems to coincide with development in different areas of the frontal lobes (Diamond, 2002; 2006; Jacobs, Harvey & Anderson, 2007). While inhibitory control seems to develop early in the preschool years (Diamond, 2006; Diamond & Doar, 1989), more complex functions, such as planning and set-shifting, emerge later, some not until adolescence (Jacobs et al., 2007; see also Hill, 2004, for a review).

The evidence that inhibitory control appears to be the first executive function to emerge during the preschool years, when symbolic play is also at its peak, combined with the argument that inhibitory control and generativity are complementary executive functions, led us to investigate their relationship with symbolic play abilities. Some indication that both these functions may be involved in symbolic play comes from studies focusing on children with autism. For example, Rutherford and Rogers (2003) found a strong association between symbolic play ability during structured and unstructured play, and little is yet known about how individual differences in executive function development relate to the onset and elaboration of symbolic play in typically developing children.

One of the reasons for the lack of evidence on the development of executive functions and their relationship to symbolic play may have been the difficulties finding valid and reliable tests of executive function for preschool children (Hill, 2004; Isquith et al., 2005), especially tasks that measure distinct components of executive function (Hughes, 2002). Most of the available tests are appropriate only for older children and/or adults. However, some of these tests can be modified for use with young children.

We chose to test inhibitory control with the Sun-Moon Stroop task (Archibald & Kerns, 1999). Although normed for seven- to 12-year-olds, this task is also suitable for younger children who are not yet reading (Archibald & Kerns, 1999), and we found that the children in our study were able to complete the task with ease. To measure generativity, we chose the Semantic Fluency task. However, because of criticisms that semantic fluency may merely measure memory for words of a particular category, rather than true generativity of ideas (Turner, 1999), another test was developed along the lines of the ‘Uses of Objects’ task (see Turner for a discussion). This Object Substitution task was also more appropriate in the play setting in which the children were tested. The children were asked to generate symbolic play acts when shown two functional and two non-functional objects (see also Jarrold et al., 1996). If this task is a test of generativity, performance should be associated with performance on the Semantic Fluency task and with engagement in symbolic play.

**Method**

**Participants**

The participants were 20 children (15 male, 5 female) aged between four and seven years (mean chronological age (CA) = 58.65; SD = 10.37; range 48–84 months). General cognitive functioning was determined by the Vocabulary, Information, Block Design, and Object Assembly subtests of the Wechsler Preschool and Primary Scale of Intelligence—Third Edition (WPPSI-III; Wechsler, 2002). All children were functioning within the normal range with a Mean FSIQ of 101.35 (SD = 9.16; range = 87–119). Overall Mental Age
was calculated by averaging the test-age equivalents of the raw scores (as specified in the WPPSI-III administration manual; mean mental age (MA) = 59.15; SD = 9.93; range 45–77 months). The majority of the children came from a middle-class (80%) and Caucasian (95%) background, with both parents present in their homes. Most of the families (73%) had a combined yearly income of AUS$ >50,000.

Measures

Inhibitory control

Inhibitory control was measured with the Sun-Moon Stroop task based on Archibald and Kern’s (1999) variation of Gerstadt, Hong, and Diamond’s (1994) Day-Night Stroop task. Children were shown a set of 16 cards with half of them picturing a yellow sun on a blue background, the other half a white crescent moon on a black background. In the ‘congruent condition’, children were taught to say ‘sun’ or ‘moon’ when shown the appropriate card. These responses were chosen over the traditional ‘day’/’night’ responses because of their more explicit stimulus-verbal response associations, as suggested by Archibald and Kerns (1999). To demonstrate understanding of task requirements, the children were required to provide one correct, unprompted response to each type of card. After this teaching session, the 16 cards were presented randomly and the children were instructed to respond appropriately (i.e. either ‘sun’ or ‘moon’) as quickly as possible.

Directly following the congruent condition, the children were instructed to switch responding to saying ‘sun’ when shown the moon picture card, and ‘moon’ when shown the sun picture card, thus requiring the inhibition of previously learned responses. After providing one correct, unprompted response to each type of card in this incongruent condition, the children were shown the 16 cards again and asked to respond according to this new rule as quickly as possible. The number of correct responses in the incongruent condition was recorded as a measure of inhibitory control.

Generativity

The ability to generate ideas was assessed with the Semantic Fluency task with two trials. Children were first asked to name as many examples of animals as they could within a period of 60 seconds. In the second trial they were required to name as many different things to eat or drink as they could within 60 seconds. If a child did not produce a correct response within the first 15 seconds of the trial, a prompt was provided in the form of an exemplar from the appropriate category (i.e. ‘a dog is a kind of animal’ for the ‘animals’ task and ‘you can eat an apple or you can drink milk’ for the ‘food/drink’ task). The total number of acceptable words generated over both trials (excluding repetitions) was scored.

A second test of generativity, the Object Substitution task, was developed specifically for this study. It was based on Turner’s (1999) description of the Uses of Objects task to measure generativity of ideas and on Jarrold et al.’s (1996) task designed to measure generativity in the symbolic play in children with autism. Children were presented with four objects, one at a time in a counterbalanced order, and asked to generate as many different object substitutions as possible (i.e. ‘what could you pretend this could be?’) within 45 seconds. Two of the objects (a plastic cup and a pencil) had a defined functional use, and two did not (a small wooden cube, and a long cardboard tube). Upon presentation of each object, the researcher modelled one example of object substitution: the cup was used as a hat, the wooden cube as an apple, the pencil as a magic wand and the tube as a snake. Children could demonstrate object substitution either verbally or through actions or both. The number of different object substitutions (excluding repetitions within and across objects) produced by each child for each item was scored. Two measures were derived from this task: the number of object substitutions generated for the functional objects and the number of object substitutions generated for the non-functional objects. As these numbers were strongly correlated with each other, the total number of generated object substitutions was used in further analyses.

Symbolic play

The verbal version of the structured component of the Test of Pretend Play (ToPP; Lewis & Boucher, 1997) was used to assess symbolic play in a structured (i.e. modelled, instructed, and elicited) condition. The ToPP is a standardised test of symbolic play which assesses the child’s ability to engage in the three main types of such play (i.e. object substitution, property attribution, and reference to absent objects). It also examines the child’s ability to combine symbolic actions into scripts, the child’s ability to use him/herself as the agent in symbolic play, and his/her ability to use others (e.g. a teddy) as the agent. In addition to good content validity, the ToPP also displays good concurrent validity, construct validity, and reliability (Lewis & Boucher, 1997). Symbolic play ability raw scores for each participant were calculated using the ToPP scoring criteria. The raw scores were then converted into age-equivalent scores (in months) using the normative data published in the ToPP manual.

Spontaneous symbolic play was assessed via a videotaped 20-minute unstructured free play session that followed the ToPP session. In addition to all of the items from the ToPP session, 15 new toys and junk items (for example, a toy truck, cup and plate, cardboard box, wooden blocks, cotton reel) were made available and the child was told that s/he could play with ‘anything you like’. To control for the effects of partner interaction and assistance, the researcher was the play partner, providing general praise (e.g. ‘wow, that looks great’, ‘nice idea’ etc.), following any specific instructions the child issued and clarifying play acts when the content was unclear (e.g. by saying ‘what’s happening...
now?'). She was careful, however, not to elicit or provide any instructions for play. Frequency of symbolic play acts was coded from the videotape using the coding scheme described in the Appendix. Only one symbolic play act was recorded per 10-second interval. Since a few of the children did not engage in any free play for the entire 20 minutes, frequency scores were converted into percentage of time spent in symbolic play. The primary coder of all tasks was the first author. A trained second observer independently coded approximately 20 per cent of the free play sessions. There was a high level of inter-rater reliability (0.97) as indicated by an intra-class correlation recommended by Shrout and Fleiss (1979) for situations where each target is rated by the same two judges.

Procedure

The children were tested in a laboratory playroom with only the experimenter present. The shortened version of the WPPSI-III (Wechsler, 2002) was administered first, followed by the tests of symbolic play. To assist with the establishment of rapport and the creation of an atmosphere for pretence, each participant was administered the ToPP prior to the free play session. The Object Substitutions task was presented after the free play session in order not to influence spontaneous symbolic expression during play. The order of presentation of the Sun-Moon Stroop task and the Semantic Fluency task was counterbalanced so that half of the children completed the Sun-Moon Stroop task at the start of the session and the Semantic Fluency task at the end, and the remaining half completed the tasks in reverse order. In total, the testing session lasted approximately 90 minutes, with frequent short breaks. All tasks were videotaped for later coding of behaviour.

Results

Children’s mean scores on each of the executive function and symbolic play measures are presented in Table 1. Pearson Product-Moment Correlations (2-tailed) were used to explore the relationship between CA and MA and the measures of executive function and symbolic play. Given the small sample size, correlations of 0.32 or greater were considered to be meaningful, regardless of whether they were significant or not, as this value accounts for approximately 10 per cent of the variance. As seen in Table 2, both CA and MA were correlated to the executive function and play variables, with r-values for MA being the highest for most variables. The correlations between the executive function and symbolic play variables are shown in Table 3, together with Partial Correlations controlling for the effect MA. Because MA seems to explain much of the variance in the relationship between executive function and symbolic play, the partial correlations will be discussed in what follows.

| Table 1: Descriptive Statistics for the Executive Function and Play Variables (n = 20) |
|---------------------------------|-------|--------|---------|
|                                 | Mean  | SD     | Range   |
| Sun-Moon Stroop                 | 12.90 | 1.74   | 9–16    |
| Semantic Fluency                | 14.60 | 5.32   | 6–25    |
| Object Substitutions            | 15.90 | 7.25   | 7–31    |
| ToPP                            | 64.15 | 8.33   | 50–77   |
| % time in spontaneous symbolic play | 48.10 | 28.47 | 8–99    |

| Table 2: Pearson Product Moment Correlations (2-tailed) between chronological age (CA), mental age (MA) and the Executive Function and Symbolic Play Variables |
|---------------------------------|-------|--------|---------|
|                                 | CA    | MA     |
| Mental age                      | 0.84**|
| Sun/Moon Stroop                 | 0.43  | 0.53*  |
| Semantic Fluency                | 0.71**| 0.81** |
| Object Substitutions            | 0.48* | 0.41   |
| ToPP                            | 0.38  | 0.63** |
| % time in spontaneous symbolic play | 0.45* | 0.51*  |

* p < 0.05  ** p < 0.01

| Table 3: Pearson Product Moment (PPM) and Partial Correlations (2-tailed) between the Executive Function and Symbolic Play Variables |
|---------------------------------|-------|--------|---------|---------|
|                                 | PPM   | Partial| PPM     | Partial|
| Semantic Fluency                | 0.43  | 0.00   | 0.24    | 0.03    |
| Object Substitutions            | 0.54* | 0.39   | 0.49*   | –0.05   |
| ToPP                            | 0.24  | –0.03  | 0.37    | 0.20    |
| % time in spontaneous symbolic play | 0.64**| 0.47*  |

* p < 0.05  ** p < 0.01
There was no apparent relationship between the Sun-Moon task, measuring inhibitory control, and the Semantic Fluency or Object Substitutions tasks, measuring generativity. However, the correlation between the two generativity tasks was of moderate positive strength. This result confirms that the Sun-Moon task does indeed measure a different construct of executive function from that of the other two tasks. It also suggests that the Object Substitution task may be an alternative measure of generativity to the Semantic Fluency task. There was also a moderately strong positive relationship between the two play variables, suggesting that symbolic play abilities are similar under structured and spontaneous conditions. Interestingly though, while performance in the Sun-Moon task was related to symbolic play ability, semantic fluency and object substitutions were not, suggesting that the ability to engage in symbolic play may be affected by the ability to inhibit prepotent responses, but not by the ability to generate alternative ones.

**Discussion**

The aim of this study was to explore the role of executive function, specifically inhibitory control and generativity, in the development of symbolic play by young children. The results indicated that the ability to inhibit prepotent responses to a situation is indeed related to the production of symbolic play, with greater inhibitory control being associated with more symbolic play, explaining 16 per cent to 30 per cent of the variance. To our knowledge this is the first study to show this association with typically developing children. Jarrold et al.'s study (1994) did indicate that children with and without disabilities are able to inhibit a habitual response to an object with a common purpose, but they did not include an independent assessment of inhibitory control in their study, and the children were not engaged in play but in an experimental task in which pretence actions were elicited under very controlled conditions. In our study, children's pretence ability was assessed during both structured and spontaneous play sessions and there was an independent assessment of inhibitory control using the Sun-Moon Stroop task.

In contrast, the ability to generate multiple uses of an object does not seem to be involved in the production of symbolic play, as there was no relationship with semantic fluency and object substitution scores. This finding is different from those of Jarrold et al. (1996) and Rutherford and Rogers (2003). However, once again, Jarrold et al. had no independent measure of generativity but inferred it from increases in the symbolic play of children with autism when they were prompted as against when no prompts were provided, arguing that reduced spontaneous symbolic play in autism could be explained by a generativity deficit. Rutherford and Rogers (2003), on the other hand, did use a separate measure and found that generativity accounted for a significant 27 per cent of the variance in symbolic play when mental age was controlled for in their mixed sample of children with and without autism. There are several possible explanations for the difference between these results. Apart from the obvious difference in the composition of their sample, the children participating in their study were younger (MA < 24 months) and age was much less variable than in ours. Moreover, their measures of symbolic play and generativity were very similar in format and in the way they were scored. The Fewell Play Scale (Fewell, 1986) was used to assess symbolic ability, where children are asked to demonstrate what they can do or how they can play with a specific set of toys. Similarly, for the generativity test, four new toys were presented to the children with comments like ‘Here is a new toy’ (p. 295). The fact that the four objects were introduced as toys would have cued the child to play, especially since this task followed the Fewell play task. Both tasks were scored in terms of whether or not the child used the toys in a pretend fashion. This lack of independence of the two tasks is likely to have contributed to the high correlation between the scores. In our study the two generativity tasks were quite different from the two play tasks and can therefore be considered as independent tests of the two constructs. For these reasons, we are inclined to conclude that the executive function of generativity is not involved in the ability of young typically developing children to play symbolically.

It is, of course, possible that the two tasks used here do not assess generativity but some other cognitive or metacognitive construct. It has been argued that the Semantic Fluency task, in particular, is more a test of memory for words of a particular category than a test of children's ability to generate novel and creative responses (Turner, 1999). Memory for words, as ability to generate new ideas, is to a large extent determined by age and cognitive ability in children (e.g. Gathercole, 2002) and our results show that the amount of variance in production of words explained by CA and MA was very large (50% and 66%, respectively) with older children able to produce more words. In consideration of Turner's criticism we introduced the Object Substitution task as a new measure for generativity. However, this task has not yet been validated as a true measure of this construct. The finding that responses in this task correlated with semantic fluency suggests that it may suffer from the same problems, i.e. measuring memory for what one can do with objects rather than true generativity of ideas. However, this correlation was modest once MA was partialled out, suggesting that another construct(s) must contribute

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1 A prepotent response is the dominant, almost automatic response that is triggered in the presence of a stimulus, e.g., the prepotent response when presented with a written word is to read the word. Executive function is thought to be important to prevent this response.
to children’s ability to name different uses for the same object. Whether one of these is generativity is likely, but remains to be evaluated in further studies.

Another possible construct involved in Object Substitution could be inhibitory control. Turner (1999) argued that, in order to produce new imaginative uses of objects, one has to inhibit reference to their conventional use. Inhibition can be discounted if the object is non-functional, as was the case with half of the objects in this study. However, the results for functional and non-functional objects did not differ and were therefore combined for analysis. It seems unlikely, therefore, that inhibitory control played a role in the Object Substitution task. If it had, one would have expected an improved relationship between Object Substitution and symbolic play, given our finding that inhibitory control, as assessed by the Sun-Moon task, is associated with symbolic play.

In conclusion, our findings indicate that executive function does appear to play a role in the symbolic play of young children. In particular, the ability to inhibit a prepotent response to a given situation or object in order to pretend a different reality, as assessed by the Sun-Moon Stroop task, is related to the production of symbolic play. However, we found no evidence that the ability to generate novel ideas is involved in young children’s symbolic play.

The limitations of the correlational analyses relied on in this study also need to be acknowledged. In addition to failing to detect the causal direction of relationships, they do not preclude the possibility that associations between the variables of interest are determined by other executive functions, such as set-shifting or planning. However, the findings that these abilities do not emerge until after the preschool years speak against this possibility. Theory of mind is another construct that should be considered in this context, as it has previously been found to be associated with both symbolic play (e.g. Astington & Jenkins, 1995; Nielsen & Dissanayake, 2000; Youngblade & Dunn, 1995) and executive function (e.g. Carlson, Mandell & Williams, 2004; Carlson & Moses, 2001; Carlson, Moses & Claxton, 2004). Thus more complex models should be considered in the future.

References


Appendix

Coding scheme for the spontaneous free play session

Symbolic play — the child displayed a symbolic play act:
- the use of one object to represent another (‘object substitution’) (e.g. pretending that a banana is a telephone)
- the attribution of absent/false properties (e.g. pretending that puppy is dirty)
- the imagination of absent objects (e.g. miming the use of a spoon)
- the attribution of animacy (e.g. pretending that teddy can walk or talk)
- role-play (e.g. the child pretending that s/he is a doctor).

To code a play act as ‘symbolic’, clear evidence of symbolic play needed to occur (the child’s verbalisation indicated that he acted symbolically, e.g. ‘the tea is hot’), or the child used non-verbal behaviours that indicated he was acting symbolically (e.g. waved hand over cup as though the contents were hot).

No symbolic play — a symbolic play act was not displayed.
The inside story:
Looking into early childhood teachers’ support of children's scientific learning

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THIS RESEARCH SEEKS TO EXPLORE how early childhood professionals support children’s scientific learning from the practitioner’s perspective. Taking a qualitative approach, this case study indicates possible ways effective team teaching can support the child’s scientific learning as well as other team members’ learning and teaching development. While conferring with past research on the importance of teachers having adequate scientific subject knowledge, this study suggests this should also be in relation to the learning community in which the early childhood setting is located. It also calls into question the teachers’ understanding of the Nature of Science (NOS), reinforcing the complexity of the issue and possible solutions to increasing early childhood teachers’ motivation to support children’s scientific learning.

Introduction

With a rapidly changing world the emphasis on children becoming scientifically literate citizens has grown (Heap, 2006), hence the interest in research into how young children are effectively encouraged to engage with scientific processes and develop working theories around scientific concepts has also developed (Fleer & Robbins, 2003). Previous research in Australia (Fensham 1991; Fleer, 2001; 2009) and New Zealand (Garbett, 2003; Hedges, 2002; Smorti, 2005) has raised concerns regarding the abilities of early childhood teachers to effectively support children's scientific learning. The studies indicate that early childhood teachers’ lack of scientific subject knowledge plays a major part in the type and amount of scientific learning supported in the educational setting, yet little appears to have changed. The previous research has indicated that addressing the concern is not a simple matter, with several interrelated factors affecting the way teachers learn and use their scientific subject knowledge. One of these is how teachers perceive their ability to support children's scientific learning.

This paper emanated from a Master’s thesis (Edwards, 2009) which sought to gain a broader understanding of the issue by investigating the perspectives of those involved in supporting children’s scientific learning on a daily teaching basis. It takes a case study approach to investigating the individual teacher’s perspectives within one New Zealand early childhood educational setting, generating data on the relationships between participants and others, as well as their perspectives. Taking a sociocultural approach to interpreting the data, Rogoff’s (2003) three lenses of analysis were adopted to encompass the wide variety of responses from participants. The findings imply that teachers may have different approaches to a common pedagogy of socioculturally based support of children’s scientific learning. Their personal teaching pedagogy, subject knowledge and understanding of what science is, or the Nature of Science (NOS), are three significant and interrelated factors. This research highlights the role of collaborative teaching practices in supporting and developing teachers’ abilities to support children’s scientific learning.

Previous research

A variety of reasons have been given as influencing teachers’ inclinations to support children’s scientific learning, the majority of which appear to lie with the individual teaching professional. The teacher’s attitudes (Alexander, 2000; Gilbert & Calvert, 2003), beliefs (Rivalland, 2007; Waters-Adams, 2006), level
of scientific subject knowledge (Fleer, 2008; Garbett, 2003; Hedges, 2002), and understanding of the Nature of Science (Heap, 2006; Hipkins et al., 2002) have all been identified as significant factors. Researchers have also identified other factors which influence those listed above and increase the complexity of the situation. These are more subtle influences, such as how the teacher’s view of the child’s capabilities is influenced by their beliefs about children (Fleer, 2009), or how the teacher’s own schooling experiences of learning science not only influence their scientific understandings (Harlen, 1999, cited in Alexander, 2000; Smorti, 2005), but also their view of NOS (Heap, 2006; Waters-Adams, 2006) and consequently their attitudes toward and confidence to engage in science teaching (Alexander, 2000). Introducing yet another factor influencing the way teachers support children’s scientific knowledge, Gilbert and Calvert (2003) view gender as a significant influence. They comment along with others on the limited opportunities teachers have had to study science (Garbett, 2003), the teaching methods employed in those opportunities (Haynes, 2000), and how science is seen in society (Water-Adams, 2006).

There are many individual and interrelated influences on the way teachers support children’s learning. For example, Rivalland (2007) conducted research in an Australian childcare centre on the ‘interplay between personal beliefs and practices’ (p. 30). Although teachers in her study followed a common teaching tenet, the degree to which they appropriated the ideas was ‘dependent on the individuals’ personal interpretations and level of interconnectedness to their intricate belief systems’ (p. 36). British researcher Waters-Adams (2006) found similar results, adding that the confidence of the teachers in his study increased only when there was a ‘resonance between their ideas about how to teach science, their understanding of the nature of science, and their general beliefs about how they should be teaching children’ (p. 939).

Along with personal beliefs, the degree of scientific subject knowledge a teacher holds has also been identified as a significant factor in influencing teacher pedagogy. Shulman’s theory of Pedagogical Content Knowledge (PCK) (1986) sees this as a basic necessity for teaching, along with knowledge of the child and knowledge of teaching pedagogy. Irish researcher Alexander (2000) highlighted the relationship between primary school teachers’ personal scientific knowledge base and their pedagogy. Specifically, she related teachers’ subject knowledge to their abilities to ask probing questions and encourage higher cognitive thought. She concluded that ‘when teachers lack confidence to teach science they tend to use strategies which allow them to maintain control in the class room knowledge flow but which are not appropriate ways of engaging students in science’ (Alexander, 2000, p. 35).

Similarly, Hedges (2002) found that New Zealand early childhood professional teachers in her research were more inclined to support children’s learning in planned situations rather than the spontaneous situations where children engaged in scientific learning during their everyday play experiences. Hedges also stressed the need for teachers’ subject knowledge. She highlighted the importance of teachers using scientific language, and the role it plays in empowering children’s scientific learning through enabling them to articulate their learning. Australian researcher Fleer (2008) stated that if teachers have scientific knowledge it enables them to engage children in further learning by keeping in mind ‘both the everyday practice where the concept is used/built and the core concept that is to be taught’ (Fleer, 2009, p. 1074). This enables links to be made between the everyday concepts and scientific concepts (Vygotsky, 1987, cited in Fleer, 2008). Fleer found in her study of Australian pre-schoolers that ‘without focused teacher-child interactions at the scientific level, only everyday concepts could develop’ (2008, p. 294).

The teacher’s understanding of the discipline of science, or NOS, is also a significant influence on teacher pedagogy. While NOS has a variety of definitions owing to the changing nature of society (Heap, 2006), there is an acceptable level of generality regarding NOS ideas (Hipkins, Barker & Bolstad, 2005, p. 244) or what Hipkins and colleagues refer to as an ‘understanding of science as a knowledge-building enterprise’ (p. 243). In her research into early childhood and primary school pre-service teachers’ understandings of NOS, Heap adopted Adb-El-Khalick, Bell and Lederman’s (1998, cited in Heap, 2006) definition of NOS which gives five common interrelated tenets. These see science emerging from observations of the world from which interpretations are made. Therefore scientific knowledge is not static and able to claim absolute truths owing to the possibility of new evidence. In this respect science is not an orderly accumulation of knowledge but requires imagination and creativity to explain observations. In acknowledging that scientists can interpret or explain the same data sets differently, the impossibility of truly objective observations and interpretations without any bias from the observer is also acknowledged. This is because of a difference between scientists’ prior knowledge, background, experiences, and theoretical beliefs. In this way, scientific knowledge is produced within a larger society and culture, influenced by the politics, economy, power structures, religion and philosophy of that society/culture.

Heap concluded that the teachers’ ideas in her research were ‘naive rather than consistent with contemporary understandings of NOS’ (p. 157). Hipkins et al. (2005), in their literature review of New Zealand science education, provided a number of possible reasons for this, such as the teachers’ own schooling experiences, or ‘educational traditions and day-to-day classroom
realities’ (p. 247). They suggest teachers need to rethink the purposes and practices of science teaching, inferring the importance of reflective practices.

While researchers have posed various factors influencing early childhood teachers’ ability to support children’s scientific learning, there still appears to be little evidence of change in research findings. Fleer (2001), in looking at early childhood science education over the past 40 years, questions how much has changed since Fensham (1991) expressed his concerns about early childhood teachers’ subject knowledge base.

The research topic
Against this background of previous research on teaching influences, this study sought early childhood practitioners’ opinions in order to gain a broader perspective of the ways New Zealand teachers support children’s scientific learning. The importance of gaining multiple perspectives in research has been increasingly acknowledged as a way of understanding all aspects of a situation. In regard to seeking multiple perspectives in researching early childhood science, Fleer and Robbins (2003) suggest taking a sociocultural approach, using such ‘sociocultural tools’ (p. 425) as Rogoff’s three planes, or foci, of analysis (1998, cited in Fleer & Robbins, 2003). This approach sees researchers going past the individual as a unit of research to also consider broader social influences, and is adopted in this study.

The research question that underpinned the study was: What are professionally trained early childhood teachers’ understandings of, and feelings about, the way they support young children’s learning in science? Eight sub-questions were developed to give further definition to the inquiry. These looked at what the research participants’ views of science were and what they felt had informed their views; how they thought they supported children’s scientific interests and how they felt about that support; and what major influences they felt impacted on their teaching. As a result, the participants in this study provided insights into the teaching beliefs they valued, how past experiences had influenced them, and what they thought their teaching role was in supporting children’s scientific learning. They also discussed factors they saw as enabling or hindering this support.

Research design and methodology
The desire to capture the early childhood professional teachers’ voices was paramount in deciding on the research methodology for this study. A qualitative, interpretive approach was chosen as the most appropriate for an exploratory study aiming to understand others’ ideas and feelings. Case study methodology was also adopted in recognition of the unique nature of early childhood educational settings and to respond to the high number of early childhood team-teaching situations in the New Zealand context. While this limits the research results to a specific situation, it is hoped that enough detail will be provided to enable others to establish the degree to which the findings for this research might be relevant to their own situation (Stake, 2005). In New Zealand, as in Australia, the early childhood sector is diverse, which makes any research attempt at generalisation questionable. However, in taking a case study approach, the views of the participants in this research can be identified as similar to or different from the views of others in the teaching team.

Research location
The research case study site was a well-established non-profit-making, full-day, multi-aged community-based childcare centre in an outer suburb of Wellington, New Zealand. It employed seven teachers, all trained except one who was still in training. The six fully trained professional teachers who participated in the research were aged between 20 and 45. Four were of European descent, one of Maori descent, and one an Indian immigrant. All had studied science to various levels at secondary school and gained teaching qualifications from the same institution.

The centre catered for 35 children aged between 18 months and five years, with no more than 28 at any one time. The environment was indoors and outside, with children choosing their area of play for most of the day in between meals, group sessions and a rest period in the early afternoon. Activities were provided to encourage learning, often around children’s interests that had previously been identified. At the time of the research, a garden project planned by the teachers and children was well underway. Children’s learning was assessed via narrative observations, often accompanied by a photograph that highlighted the children’s dispositions. These were referred to as ‘learning stories’ (Carr, 2001) and not only documented the children’s learning but were on occasions also revisited by the staff, parents, child, or any combination of these to further learning opportunities both at the centre and at home.

Data collection methods
An initial interview with each participant gathered information on their background as well as their ideas on what science is and how scientific learning might be supported in early childhood. Participants were also asked for their views on any values or beliefs, and influences from their family, school or other educational experiences they saw as contributing to
the way they supported children's scientific learning. For the following three days, participants gathered documentation on situations in which they recognised children as engaged in scientific learning or possible scientific learning. Participants were supplied with a digital camera, Dictaphone, and note-taking equipment. Using the digital camera to take photos was the most popular data-gathering method. At the end of the three-day period, each participant had a second interview, which was less structured than the previous one and focused on the participants talking about the data they had collected and what they did, or might do, to respond to the situation. Data was collected within the early childhood setting for a three-week period between late November and early December.

To strengthen the validity of the research findings and ensure the views of the participants were accurately documented, 'member checking' (Mutch, 2005) was employed. This involved the participants checking their interview transcripts as well as participating in a focus group interview. This interview was centred on a PowerPoint presentation of collated research data and the initial analysis. At the participants' request, all teaching staff at the centre were involved in the group discussion, including the one teacher who had been a research participant and not collected data. The transcript of the focus group was then analysed in light of the initial data.

**Ethics**

The focus of this research was on the teachers’ perspective, but some of the data gathered included documented observations of young children engaged in scientific learning. For this reason, careful ethical consideration was given to the ownership and use of the observations and any photographs taken. While it was agreed that the photos belonged to the centre and could be used as part of assessment procedures, specific permission was also sought from participants and parents to use some of the photos in disseminating the research findings. All ethical considerations were reviewed by the Victoria University of Wellington Faculty of Education ethics committee, with consideration given to participant, parent, and managerial consent forms, which clearly identified the research process and involvement required.

**Method of data analysis**

All the interview transcripts were thematically coded broadly around the sub-questions related to the research question and entered into a matrix to enable comparisons. The sub-questions identified how the teachers defined science; what they saw as informing their views of science; the teaching strategies they employed when supporting children's scientific learning, including their use of the early childhood national curriculum, *Te Whāriki*, (Ministry of Education, 1996); how they felt about the learning support they provided, and what they saw as enabling or hindering them. Another set of data drawn from the interviews concerned the participants’ background information and helped to identify similarities with, and differences from, the participants’ previous experiences. A third and final set of data analysis was based on the documentation collected by the participants, primarily photographic. It focused on the number of children in an observed situation, their ages, their gender, and the location.

In order to collate the three sets of data analysis, the results were then analysed in light of Rogoff's (2003) three planes of foci to examine the personal, interpersonal, and cultural-institutional influences on the participants’ support of children's scientific learning. While this approach has previously been used as an analysis tool for looking at children's learning (Robbins, 2005), in this situation it was utilised to focus on the teachers’ actions. This highlighted the participants’ individual teaching pedagogy and knowledge base, as well as teachers’ relationships and collaboration with others in the team. It also identified cultural, institutional and historical factors, such as specific language and educational resources that were part of the participants’ scientific learning support.

**The findings**

From a wide range of data, three key findings emerged: the collective and individual nature of early childhood teaching; the complexity and interrelated nature of influences on teaching decisions; and the influential role of the participants’ perceptions of NOS. These findings will now be discussed in more detail along with the possible implications of these for other early childhood professional teachers, teacher educators and future researchers.

**The collective and individual nature of teaching**

The participants in this study used the collective knowledge and support of the teaching team as a deliberate teaching strategy to support children's scientific learning. First, in pragmatic terms, teachers used others’ physical support to overcome perceived barriers in supporting children’s scientific learning, such as having very young children present or more pressing care and teaching demands. While this was not the focus of this research, these barriers were often given as the reason participants had not responded to children they had noticed and documented as engaged in scientific learning.
Second, in line with Shulman’s theory on Pedagogical Content Knowledge (PCK) (1986), the participants shared their scientific subject knowledge, early childhood pedagogical knowledge, and knowledge of the individual children to support their learning. As one participant commented, ‘It doesn’t depend on me; sometimes it could be that the other teacher has the knowledge of that.’ This suggests that a teacher’s ability to work within a team can increase their ability to support children’s scientific learning. It also highlights the collaborative skills required when working in teaching teams and suggests that teachers increase their own scientific subject knowledge in relation to their co-teachers’ scientific interests. This reinforces the need for teachers to access current scientific knowledge bases, whether these are digital, web-based, or in the form of supplementary curriculum documents.

Finally, the use of reflective practice was particularly evident during the focus group interview. The initial findings were presented to the participants, and the resulting debates not only highlighted differences and similarities in teaching pedagogy but also acted as a catalyst for collective and individual teacher reflection. For example, this happened with a debate regarding the degree to which scientific language and explanations should be used with the children.

During the focus group interview, it was also evident that while all the teachers had adopted a common pedagogical approach in line with the New Zealand early childhood curriculum documents, they also had their own interpretations of that pedagogy. This is congruent with past research regarding the influence of teachers’ belief systems on their teaching pedagogy (Rivalland, 2006, Waters-Adams, 2006). It also supports the work of New Zealand researcher Jordan (2003), who has previously noted the varying degrees to which New Zealand early childhood professional teachers have adopted sociocultural theory. She notes that, while sociocultural theory has ‘become the accepted umbrella paradigm for learning’ (p. 3), teachers are still ‘coming to terms with what the adoption of socio-cultural theory might mean in practice, for children and for adults’ (p. 3).

An understanding of the NOS

When asked about their understanding of what science is, the participants gave broad answers, some indicating they had not thought much about it. There appears to be little emphasis given to NOS in early childhood teacher training or the New Zealand curriculum document, Te Whāriki, although it is an important tenet in the New Zealand primary school curriculum, NZCF (Ministry of Education, 2007). While not a concept one might directly teach to young children, the teacher’s understanding of science is crucial if scientific attitudes and understandings are to be encouraged and developed in children.

Findings in this research indicated that participants had differing degrees of understanding NOS and an inconsistency in their viewpoints. For example, some participants increased the number of planned scientific activities provided for children while others retained a consistent pedagogical stance, as demonstrated by this participant’s comment:

I don’t think I respond any differently now to a science concept than I did then ... I was one of those people who think science is in everything anyway; even washing your hands is a scientific concept if the children are asking about water and all that sort of stuff. So I still think that if a child asked that question I’d still certainly respond to it in a scientific way.

During the research some participants also developed their understanding of NOS. As one commented:

You think about science, you know, experiments an all that. ... Then going further, going from that one belief, ‘Yeah, that’s science’, to seeing all science happening and thinking, ‘Oh, that’s science and I didn’t think of it that way before.’

Along with an increased understanding of NOS there was also an increase in that participant’s ability to recognise children as possibly being engaged in scientific learning. She commented:

That is H and she’s talking away about, ‘Do I need to push you?’ And it’s her using the force behind her to get them to go because they’re telling her they want to go high and fast and it’s her trying to get in behind them and help make it happen.

A strong understanding of NOS is required to effectively support children’s scientific learning in an holistic manner. In this study, teachers referred to the integrated nature of scientific learning in early childhood. However, while one participant spoke of finding ‘the science aspect in anything really’, others appeared surprised when reflecting on the scientific learning children might be engaged in: ‘You don’t realise what’s science until you really have a look at what’s happening out there and they’re doing it all the time.’ This raises the question of whether a lack of understanding of NOS leads to holistic teaching practice becoming an excuse for not addressing specific gaps in teachers’ subject knowledge. Even teachers who are unsure or have misconceptions of what science is still support children’s working theories around NOS, whether they are aware of it or not.
The complexity and interrelated nature of influences on teaching decisions

By using the three sociocultural foci of analysis suggested by Rogoff (2003), several factors influencing the participants’ support of children’s scientific learning emerged, highlighting the complex and multidimensional aspects of teaching. Factors identified in past research, such as adequate subject knowledge (Fleer, 2008; Hedges, 2002), having a solid understanding of NOS (Heap, 2006), or effective teacher pedagogy (Fleer, 2009; Waters-Adams, 2006), were evident, as well as the way they interrelated with each other. Additional factors identified by the participants included drawing on each other’s expertise and experiences, the use of reflective practice, and the impact of the day-to-day realities in this type of early childhood setting. Some aspects were specific to that context, such as working within a multi-aged environment, caring for and educating children from eight months to five years old. Other examples given by participants were broader and concerned the multi-tasking nature of a full-day-care early childhood setting, as demonstrated by this participant’s comment:

They [the children] ask questions and you’ve got 50 million things to do and a baby that you’re feeding. So if you can, remember to come back to it, or grab them a book or something that they can look at for themselves.

While much of the data in this study supports previous research findings, this was not so for all of it. One participant’s enthusiastic and positive attitude to providing support for children’s scientific learning, regardless of her own knowledge base, overcame barriers which inhibited other participants’ teaching support. This appeared to be because of her attitude and pedagogy. While previous claims that adequate scientific subject knowledge is required to support the ‘interlacing of everyday concept formation and scientific concept formation’ (Fleer, 2009, p. 299), this participant’s approach indicates that attitude and confidence can lead to a willingness to support children’s scientific learning. New Zealand curriculum documents refer to this support as the teacher’s ability to notice, recognise and respond to children’s learning.

Most participants in the study commented on the challenge of providing simple, spontaneous extension activities or simple scientific explanations, and all acknowledged they were still developing their subject knowledge base. However, it appeared teacher pedagogy was also a significant factor in whether or not the participants responded to situations they had noticed when collecting data. Participants responded to only 55 per cent of the situations for a variety of reasons. One was a belief in children’s independent learning, illustrated by this participant’s comment: ‘If they are doing something else, because they are so much into it, like the slide. They were so much into that they didn’t want me to interact.’ Other participants felt not responding was also a way to support peer learning situations: ‘I’m quite happy with what I’m observing. I think it’s really cool that there are times when I can step in and help them, but it’s cool that they’re doing it with their peers.’

Teacher pedagogy was evident not only in whether the participants responded but also in how they responded. One participant engaged in shared learning situations that extended her knowledge base as well as the children’s. For example, as a result of a conversation, she and the children found out more about wombats they were making a stew from. Conversely, having failed secondary school assessments in science, another participant felt this inhibited her ability to feel confident about providing scientific explanations. Thus it is the teacher’s beliefs about, and confidence in, their scientific knowledge, as well as their teaching pedagogy that enables it to be used.

However, the type of scientific concepts a teacher learns in expanding their knowledge base is also of relevance. In this study there was evidence that the participants’ knowledge bases increased in accordance with the interests of the children, parents, other teachers, and wider community. This was most evident when a child at the centre expressed an interest in viscosity. While one teacher knew of the scientific concept, others increased their knowledge about it as a result of the child’s interest. In this way the knowledge base of the early childhood professional is developed in relation to the interests and knowledge valued by the associated learning community (children, parents, and wider community members). This enables the teacher to encourage the children to make links between their everyday experiences and scientific concepts (Fleer, 2009). It appears an emphasis during training on teachers’ identifying and developing scientific knowledge valued by the community they work within may be of more value than trying to increase teachers’ general knowledge. For practising teachers, scientific knowledge of importance to the community may become evident during conversations with parents or other community members, and at local cultural events. However, further discussion and research may also be necessary for teachers to understand the ideas and values that underpin the concepts.

This creates the possibility of a knowledge base that is locally contextualised, relevant to the child, and open to both local and global perspectives. In this scenario the teacher’s relationship with the child and their family is vital in supporting the development of the child’s scientific working theories. It also highlights the importance of the teacher’s relationship with the rest...
of the learning community. In this study, conversations with parents about the child's learning experiences were a way for parents to share their perceptions of the child's learning and, in turn, influenced the way the participants supported the child's learning.

However, having adequate subject knowledge is not just about knowing scientific concepts but also having a clear understanding of what the nature of science is. This adds further complexity to the situation, as it appears from this research that the teacher's understanding of NOS is related to the role they felt a teacher should play in supporting children's scientific learning. Participants in this study with a solid understanding of NOS appeared to approach a lack of knowledge of the child's scientific interest as a positive opportunity to utilise co-constructive teaching strategies and learn more about a particular topic. However, those who demonstrated less understanding of NOS appeared inhibited by a lack of confidence in their ability to provide the child with correct scientific explanations.

It appears that a number of interrelated factors influence teachers' feelings in regard to their support of children's scientific learning. This implies that a multifaceted approach is required to encourage teachers to engage in more effective support (Hipkins et al., 2002). For example, the influence of the day-to-day realities of teaching in an early childhood environment was identified by participants as influencing their ability to support children's scientific learning. While they did not view this influence as entirely negative, because it also creates possibilities for peer learning, it does imply that structural aspects of the context in which children are learning significantly influence the science education those children receive. The ways teaching influences are interconnected suggest there are a number of ways teachers' negative perceptions toward science education might be challenged and changed. In particular, this study has identified a solid understanding of NOS, along with a positive attitude to one's subject knowledge base, reflective teaching practices, and a supportive teaching team as four salient factors that should be considered in fostering teacher engagement in young children's scientific learning.

Although such support is often seen as an individual endeavour, this case study has highlighted the ways the participants' teaching abilities were supported through the use of collective team knowledge and interplay of individual and group reflective practice. As a climate of discussion, critique, and knowledge sharing amongst team members can maximise the knowledge of each team member, consideration should be given in teacher training and professional development to encouraging the development of team-teaching practices. This suggests that further research into early childhood science education should also take into account the wider influences that occur in collaborative team teaching, possibly examining the diversity of the collective knowledge base within an educational setting and what makes for effective use of that knowledge base.

Increasing teachers' knowledge of the concept of NOS has the possibility of challenging and possibly changing teaching pedagogy with regard to children's scientific learning. A view of science as static inhibits teachers' use of their scientific knowledge and can encourage children to view science in a similar way. Developing a teacher's understanding of NOS has the possibility of developing the teacher's confidence and ability not only to support children's scientific learning but also to model scientific learning as the teacher's own knowledge base increases in conjunction with their colleagues', the children's, and parents' scientific interests and knowledge. Further research on the ways teachers might learn about and reflect on the knowledge base of the communities where they teach could provide further insight into utilising a 'funds of knowledge approach' (Hedges, 2007). There were a number of factors influencing the participants' support of children's scientific learning, and the findings from this study indicated the interrelated nature of these. For example, the participants' understanding of NOS influenced their personal pedagogy, which in turn influenced the scientific learning support they provided for children. Subsequently there is also no single solution to increasing early childhood professionals' engagement with scientific learning. However, one notable teaching strategy that emerged from the study is reflective teaching practice. Both individual and group reflective practice was used by the participants to develop their abilities to support children's scientific learning. It appears that teachers' reflection on their feelings about science and understandings of NOS can empower them to develop their support of children's learning. This has implications not only for the teachers but also for professional development, teacher training, and further research.

Enhancing early childhood teachers’ abilities to support children's scientific learning is a complex issue involving several interrelated factors, and an increased
teacher awareness of these factors might bring about a greater effectiveness and consistency in the way teachers provide this support. This study suggests that the individual and collective endeavours of teachers support children's scientific interests and develop the individual teacher’s practice as well as the scientific understandings of the future generation.

If this happens, early childhood professional teaching practices can influence the wider society as increasingly scientifically literate citizens contribute to the way that society is shaped.

References


**Introduction**

In Queensland, Australia, the arts is a compulsory learning area in the curriculum comprised of five areas of application: dance, drama, music, media and visual arts. According to the *National Education and the Arts Statement* (Ministerial Council for Education, Employment and Youth Affairs, 2007), all children and young people should have a high-quality arts education. To achieve this teachers require a high level of skill and training, and the belief that they are self-efficacious in the teaching of arts education (Andrews, 2004). This points to the role of pre-service teacher education to develop the capability to teach arts education. This study utilises Bandura’s (1997) model of self-efficacy beliefs. Novice early childhood teachers were invited to reflect on their professional practice experience during pre-service teacher education to provide insights into how this has contributed to the formation of their self-efficacy beliefs in the arts. Findings confirm that novice teachers develop beliefs about arts education during professional experience that shape their future beliefs towards teaching arts in the early years. These beliefs are likely to be negative, thereby contributing to the formation of negative emotional association and low self-efficacy beliefs for teaching arts. Furthermore, three main themes emerged from the data about the impact of professional experience: 1) supervising teacher practice (vicarious experience); 2) supervising teacher feedback (verbal persuasion); and 3) the profile of arts as a subject experienced by the respondent (vicarious experience). The implications of these findings are considered in terms of pre-service teacher education and ongoing professional learning for teachers.

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**Breaking the negative cycle:**
The formation of self-efficacy beliefs in the arts. A focus on professional experience in pre-service teacher education

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**ACCORDING TO THE NATIONAL** Education and the Arts Statement (Ministerial Council on Education, Employment, Training and Youth Affairs, 2007), all children and young people should have a high-quality arts education. To achieve this teachers require a high level of skill and training, and the belief that they are self-efficacious in the teaching of arts education (Andrews, 2004). This points to the role of pre-service teacher education to develop the capability to teach arts education. This study utilises Bandura’s (1997) model of self-efficacy beliefs. Novice early childhood teachers were invited to reflect on their professional practice experience during pre-service teacher education to provide insights into how this has contributed to the formation of their self-efficacy beliefs in the arts. Findings confirm that novice teachers develop beliefs about arts education during professional experience that shape their future beliefs towards teaching arts in the early years. These beliefs are likely to be negative, thereby contributing to the formation of negative emotional association and low self-efficacy beliefs for teaching arts. Furthermore, three main themes emerged from the data about the impact of professional experience: 1) supervising teacher practice (vicarious experience); 2) supervising teacher feedback (verbal persuasion); and 3) the profile of arts as a subject experienced by the respondent (vicarious experience). The implications of these findings are considered in terms of pre-service teacher education and ongoing professional learning for teachers.
teacher education (Department of Education, Science and Training, 2008). Together these reviews highlight the decline in status and support for music and visual arts that is typical of most teacher education programs. The reports call for improvement in pre-service teacher training and for ongoing professional learning.

**Theoretical context**

Self-efficacy is defined as ‘beliefs in one’s capabilities to organise and execute the courses of action required to produce given attainments’ (Bandura, 1997, p. 3). The construct of teacher self-efficacy is grounded within self-efficacy theory, emphasising that people can exercise influence over what they do (Bandura, 2006). A teacher’s beliefs system about the arts will therefore determine the quality of arts education in the classroom. Teacher self-efficacy beliefs for arts education are created through social influences and feedback, particularly from those deemed to be significant and respected (Bandura, 1997). In the case of pre-service teacher education, this might be the teachers that serve as mentors to pre-service teachers during professional practice. Self-efficacy develops over time and through personal and vicarious experiences (Bandura, 1997). Beliefs are created through decisions influencing actions, attitudes, emotions and thoughts. Thus, self-efficacy acts as a motivational construct, determining the actual amount of effort that an individual will bring to the task of teaching as they assess their ability to perform the teaching task successfully (Tschannen-Moran & Woolfolk Hoy, 2001).

Self-efficacy is important for perseverance. In education, for example, teacher self-efficacy has been related to a number of desirable teacher practices, including: greater commitment to teaching (Coladarci, 1992); greater levels of planning and organisation (Allinder, 1994); decreased teacher burnout (Brouwers & Tomic, 2000); and utilisation of a wider variety of teaching material with the desire to search for a new teaching formulae and the use of innovative teaching methods (Ghaith & Yaghi, 1997; Wertheim & Leyser, 2002). However, in a recent study by Garvis and Pendergast (2010) which investigated early childhood teacher self-efficacy beliefs with respect to teaching arts education, it was revealed that on a 9 point Likert scale respondents had highest self-efficacy to teach English (6.81) and maths (6.81), followed by a large gap to visual arts (4.86), music (4.39), dance (4.21) and drama (4.19) and media (3.98). This reveals that early years teachers did not have a high self-efficacy belief in the area of teaching the arts.

In an interview with Woolfolk Hoy, Shaughnessy (2004) notes that if teachers seek to help students increase their academic and self-regulatory self-efficacy, they should first attend to the sources underlying their own beliefs. Teacher self-efficacy beliefs are influenced by four sources: 1) mastery experiences; 2) vicarious experiences (modelling); 3) verbal persuasion; and 4) emotional arousal (Bandura, 1997). These may happen simultaneously or in isolation. Mastery experience is considered to be the strongest source to develop self-efficacy (Bandura, 1997; Tschannen-Moran & Woolfolk Hoy, 2001). When an experience (or performance) is perceived to be successful, self-efficacy is raised. When the performance is perceived to be a failure, self-efficacy beliefs are lowered. The level of emotional arousal (either excitement or anxiety), adds to the feelings of mastering a task. Vicarious experiences are associated with the modelling of a task. If the observer can identify the skills needed to complete the task, teacher self-efficacy can be enhanced. The final source, verbal persuasion, consists of discussions around the task being performed. The potency of verbal persuasion depends on the credibility, trustworthiness and expertise of the persuader (Bandura, 1997).

In arts education, previous research has explored the influence of specific knowledge and skills on teacher self-efficacy. Research by Temmerman (1997) and Bartel & Cameron (2002) for example shows that a perceived lack of competency to teach the specific knowledge and skills required in music is a significant internal factor affecting teachers’ perceptions of their musical ability. Furthermore, in a comparison between one New Zealand and one Canadian generalist teacher, self-efficacy towards music, levels of competency and self-efficacy clearly influenced curriculum (Bartel et al., 2004), with few teachers able to show an understanding of students’ musical thinking. These two teachers were also unable to make judgements ‘about the value or importance of the consequences of an action for the arts’ (Bartel et al., 2004, p. 88). These results suggest teacher self-efficacy strongly influences the way arts education is taught in classrooms.

This study contributes to gaining some understanding of the role of professional practice during pre-service teacher education in developing teacher self-efficacy beliefs that contribute to forming the capabilities of novice teachers. In particular, we look at the influence of supervising teachers as sources of arts education self-efficacy informants on the beliefs of beginning early childhood teachers.

**Focus of the study**

This study focuses on sources of arts education self-efficacy information received by pre-service teachers during their professional experience and how these sources of self-efficacy information have influenced their own arts education practices as novice teachers. This study focuses on the following two questions:
1. What sources of arts education self-efficacy information do novice teachers report from their pre-service professional experience?

2. How are these sources of self-efficacy information likely to influence their arts education practices as novice teachers?

The participants

For purposes of this study, novice teachers are defined as teachers in the first three years of their career since graduating from a teacher education institution. Using convenience sampling, novice teachers working in early childhood education from both private and public schools in Queensland, Australia were invited to complete a questionnaire on teacher self-efficacy in relation to arts education. Participants answered a ‘call for participants email’ sent through the Beginning Teachers Association to all early childhood beginning teachers. Participants were current members of this organisation and still within the first three years since graduation. Participants represented different schools regions across the state of Queensland. Twenty-one out of 60 questionnaires were returned from participants providing a response rate of 35%. The sample is non-representative and non-generalisable.

Instrument

The online survey consisted of 10 open questions designed to elicit descriptions of novice teacher’s experiences with arts education as part of the professional experience component of their teacher education program. During this time, the then pre-service teachers were supervised by teacher(s) with a minimum of three years teaching experience, as required by the professional experience guidelines. Participants were asked to rank their recalled experience during this time period as having a positive or negative valence. The use of valence reveals the emotional value attributed to the professional experience, directly connecting with emotional arousal identified by Bandura (1997) as contributing to the formation of self-efficacy beliefs.

Participants were assured that the survey was anonymous. They were sent an online survey to complete that did not ask for any identifying characteristics. Participants could complete the survey outside of school hours.

Analysis

Results were analysed using content analysis to locate key themes that were common across novice early childhood teacher’s perceived experiences of professional experience during teacher education. Content analysis is ‘a research technique for making replicable and valid inferences from texts to the context of their use’ (Krippendorff, 2004, p. 18). An adapted version of Cavana, Delahaye and Sekaran’s (2001, p. 171) 15 stages of content analysis (based within the constant comparative method) was used as a guide to identify key themes and meanings. Coding for ‘manifest content’ (Wallen & Fraenkel, 2001) was used, acknowledging what was directly written in the online survey rather than what might be implied or interpreted.

Findings

The respondent novice early childhood educators almost exclusively recounted negative valence experiences that had occurred during the professional experience component of their pre-service teacher education program. These experiences were shaped by either supervising teacher practices (a form of modelling), or supervising teacher feedback (verbal persuasion). The respondents also talked about the tensions they saw between the arts and other subjects, showing links to vicarious experience and emotional arousal (contextual influences). Tensions were shown by supervising teachers, with the curriculum being overcrowded and a greater focus placed on the teaching of literacy and numeracy. This appeared to create negative teacher self-efficacy beliefs for teachers about the arts in school.

Three main themes emerged from the content analysis:

2. Supervising teacher feedback (verbal persuasion).
3. The profile of arts as a subject experienced by the respondent (vicarious experience).

Each theme is now discussed.

Supervising teacher practice

The first theme confirmed vicarious experience as a source of efficacy (Bandura, 1997). Vicarious experiences (also known as modelling) allow participants to personally experience arts education teaching practices. However, experiences recounted by respondents typically revealed a lack of mastery experience by their supervising teachers, that is, the supervising teachers did not model suitable arts education practice to the pre-service teacher leading instead to negative valence vicarious experiences rather than the desirable positive vicarious experience.

One novice early childhood teacher recounted a negative experience she had during a professional experience with a supervising teacher in a kindergarten. She felt disheartened that arts practices were not being modelled within this particular setting:
One of the saddest moments of my practical teaching was when I was studying my Grad (sic) Diploma and I was at a well-regarded kindergarten. I was there for two weeks and basically the same activities were set out. I questioned the director as to why some children were not getting involved in the art activities and she told me that ‘this lot are not very creative!’ This went against all my beliefs about early childhood education and I felt very sorry for those children. (Beginning Teacher, B)

Another novice teacher also commented on the lack of quality arts education she experienced during her professional experience:

I did little arts work on practical experience. If I did it was art and the activities were always related to the unit I was teaching at the time. Very restricted though. (Beginning Teacher, A)

The absence of arts education was reportedly common amongst the novice early childhood teachers who completed the survey. Thirteen respondents (62%) recalled that they had not seen any form of arts education in the early years during their professional experience:

I never saw it used on any teaching prac (sic). (Beginning Teacher, C)

Many of my prac (sic) teachers did not do the arts. (Beginning Teacher, J)

These findings reveal that the respondents did not experience positive valence modelling during teacher professional practice components of their pre-service teacher education that would lead to positive teacher self-efficacy for their future teaching of the arts. Without adequate opportunities for positive vicarious experiences, pre-service teachers may need to draw on other sources of efficacy to develop perceived capabilities towards teaching the arts.

**Supervising teacher feedback**

Some respondents recounted hearing negative comments (negative verbal persuasion) from their supervising teacher with respect to the teaching of arts education. The respondents who described these experiences concluded that the teacher did not value the arts, which influenced the beginning teacher’s values in relation to the teaching of the arts in early childhood classrooms. For example, one novice teacher described a negative experience with a Year 1/2 classroom teacher:

On my first prac (sic) at a public state school I was involved in art groups that consisted of all of things that I had avoided in my work in early childhood centres. Stencilled outlines of horses that children had to collage over, bubble blowing painting … where was the freedom of expression in that? When doing a maths lesson in subtraction for a Year 1 and 2 composite class I sang ten green bottles with the class. The children sang along happily but my supervising teacher told me to keep the noise down so as not to disturb the children next door. (Beginning Teacher, F)

Another respondent described the negativity from their mentor teacher when they incorporated arts in their lessons:

My teacher thought the arts weren’t as important. When I started teaching them, I got in trouble. (Beginning Teacher, I)

Verbal persuasion appears to influence the self-efficacy of the participants during their professional practice experience. The verbal feedback of supervising mentor teachers appeared to shape current understandings about the arts in the early years classroom.

**The profile of arts as a subject**

Typically, early childhood teachers do not have formal training in the arts (Eisner, 1988; Eisner & Day, 2004) in pre-service education programs, but are encouraged to ‘integrate’ arts into the core curricular areas. Respondents in this study provided recounts of the place of arts in the curriculum during their professional practice experience while enrolled as pre-service teachers. The now novice teachers suggested that this lack of exposure to the arts as part of the curriculum impacted upon their current beliefs and may potentially have an impact on their future practice. One respondent suggested that some teachers de-intellectualised the arts, making it a ‘fun’ subject:

Many teachers allow students to develop this ‘bludge’ mentality by not valuing the arts themselves. It is a difficult battle to reform students’ opinions. (Beginning Teacher, L)

One respondent recounted poor pre-service teacher education leading to inadequate teaching of the arts in schools. Subsequently, the teacher suggested generalist teachers only teach certain subject areas:

I don’t think teachers that have been around a long time see the benefit of it or have the training or ability to implement it. They just teach reading, writing and maths. (Beginning Teacher, M)

The portrayal of the arts would lead the supervising teacher to model the teaching of the arts with certain characteristics. The pre-service teacher would see this negative modelling and may also start to develop negative beliefs about the arts.
Discussion

The recounts from the 21 respondents of this study reveal that most experienced negative valence professional practice of arts education during their pre-service teacher education program of study. These experiences were based on professional experience in classrooms under the guidance of mentor supervising teachers during pre-service teacher education programs. Participants recounted the negativity towards the arts while on practical experience and experiences during this time are confirmed as developing teacher self-efficacy beliefs. The study also reveals that arts education in the classrooms in which these respondents, as students, undertook their professional learning, did not incorporate arts in a positive way.

These findings provide an interesting starting point for analysis in the investigation of the beliefs of novice early childhood teachers on their pre-service teacher education. It appears that supervising teacher practices, supervising teacher feedback and the profile of the arts as a subject contribute to a teacher’s self-efficacy. The previous discussion, which focuses on beginning early childhood teachers’ perceptions of their arts education experiences in their pre-service teacher education professional experience, provides an interesting insight into sources of self-efficacy information about the teaching of arts education.

Without positive experiences created through Bandura’s (1997) proposed sources for developing efficacy (mastery experience, vicarious experience, verbal persuasion and emotional arousal), novice early childhood teachers may feel they have little capability when teaching the arts in their own classroom. In the long-term, these experiences may contribute to lower teacher self-efficacy for the arts, creating a cyclical problem of failure for arts education in early childhood.

From this study, a major concern of teacher educators appears to be helping pre-service teachers understand the importance of arts education in the early years and to critique experiences while on professional practice experience. Based on the data collected, it appears that respondents remember the negative events with arts education. This could suggest that since these events were remembered, they are held as possible sources of efficacy for the beginning teacher.

From this research, two issues are raised: (1) teacher education and (2) professional development. Firstly, how do universities control how supervising teachers demonstrate quality arts education practices? If a mentor supervising teacher’s self-efficacy for the arts is low, how can they be equipped to model and critique suitable arts practice in the classroom? Their lack of teaching in the arts will affect the beginning teacher they are supervising, possibly creating low teacher self-efficacy for the novice teacher in a continual cycle of failure. As Bandura (1997) suggests, giving teachers a sense of efficacy is critical if they are going to even attempt the task.

The second issue raised is ensuring professional development opportunities in arts education for early childhood teachers. To improve teacher self-efficacy for the arts in early childhood, greater support for teachers in the field is needed. Support is required in the form of professional development for early childhood teachers who are working in schools and early childhood centres. Through ongoing professional development, early childhood teachers can begin to value the arts in their decisions about implementing curriculum.

In conclusion, current practices in arts education courses in early childhood teacher education programs must be reviewed if teachers are expected to learn skills that they can use in the classroom. Closer links must be made with mentor supervising teachers. This study points out the need for further research in arts education in the early years. For example, what are the current influences on teacher self-efficacy for early childhood teachers in schools? Can professional development and community involvement improve arts education in schools? Can a generalist teacher have strong teacher self-efficacy beliefs for all key learning areas? Such research would provide teacher educators, and schools, as well as policy-makers, with evidence of crucial periods in time where novice early childhood teachers require greater support. This would allow teacher self-efficacy for arts education to be supported throughout the beginning phase of teaching, when self-efficacy beliefs are developed and often consolidated for the future teaching of the individual educator.

References


Introduction

In 2007 the new Australian Labor Government committed to significant reforms in early childhood education; this placed increased attention on the provision of quality services for the nation’s young children. The resulting National Quality Agenda for children from birth to five years promised increased access to quality early learning for four-year-olds, to be delivered by qualified early childhood teachers, and emphasised outcomes related to investment, productivity and participation (Labor’s Plan for Early Childhood 2007). In addition, the national Early Years Learning Framework (EYLF)(DEEWR, 2009) for children from birth to five years was endorsed by the Council of Australian Governments (COAG) and has been implemented since 2009. The EYLF aims to lay the foundation for children’s learning that will ensure effective transition and later school success. These reforms imply increased responsibility for educators to support and build strong foundations and smooth transitions across and between early childhood education and care settings.

Recent government trends and current practices highlight the importance of understanding the transitions children make, as well as the need for continuity of learning and development across settings and sectors. Young children in developed countries are being cared for in a range of settings other than by their parents in the family home. In Western Australia (WA), statistics support this trend: up to 23 per cent of children from birth to three years and 69 per cent of three- to four-year-olds spend some of their week days in formal childcare settings (Australian Bureau of Statistics, 2005).

The term ‘transition’ in the early childhood literature has been used to describe the movement of children from one institutionalised setting to another (Lombardi, 1992). Lam and Pollard (2006, pp.124–125) point out that many researchers over time have used the term to denote a move across cultural contexts from one institutional setting or phase to another in the educational continuum. Kagan and Neuman (1998) describe two types of transition. They refer to the first type as vertical transition, which is an upward shift from one institution to another. For example, transition from home to long day care (a centre-based child care provision for children from birth to five years which operates extended hours to support families), or from long day care to school. The second type is horizontal transition, which happens as children move to and from different settings daily. For example, children may attend a long day care centre for part of the day or week, and attend a kindergarten for the remainder of

Transition from long day care to kindergarten: Continuity or not?

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TRANSITION PRACTICES THAT ENSURE continuity between early childhood settings have been shown to be important in assisting children’s short-term and long-term growth and development (Vogler, Cravello & Woodhead, 2008). In Western Australia many young children move from and between long day care (LDC) settings to kindergarten. In that state, kindergarten is a non-compulsory sessional program for four-year-olds, conducted on school grounds and administered by the school principal. This paper describes the perceptions and practices of kindergarten teachers concerning transition processes and continuity of experience for the children who had attended long day care centres prior to kindergarten entry. Evidence from the study suggests that, although the majority of teachers considered transition to be important, in practice continuity appeared to range from fragmented to non-existent. Factors that appeared to inhibit effective transition and continuity are identified and a number of questions are raised about ways of ensuring continuity of experience.
the week. These multiple models support the concept that ‘one point transitions’ (such as starting school) are not the only significant points of transition in young children’s lives.

In addition, Vogler and colleagues (2008, pp. 1–2) suggest that transition cannot be captured in a single definition. They argue that it often involves significant psychological modifications on the part of the child and is dependent on the nature and causes of the transition, the degree of change and continuity, and the vulnerability and resilience of those affected. Lam and Pollard (2006) refer to continuity as the compatibility or similarity of two environments in which there is continuous experience, whereas discontinuity means two incompatible environments between which children experience inconsistency.

The early childhood literature abounds with reports and papers that describe the discontinuous experiences children negotiate on entering formal schooling and the difficulties in children’s transitions from the kindergarten or home setting to school (for example: Woodhead & Moss, 2007; Arnold, Bartlett, Gwani & Merali, 2007). Factors that contribute to a difficult transition for children and discontinuity of experience include changes in physical environment, differences in classroom organisation, discontinuities in curriculum content and teaching strategies, and differing ideologies and relationships between early childhood and primary teachers (Ledger et al., 1998, cited in Lam & Pollard, 2006; Margetts, 2002).

The more similarity children experience between settings and the less discontinuity around learning and relationships, the more likely it is that children will move confidently from one setting to another (Dockett & Perry, 2007). Attitudes to school and future learning can be greatly influenced by the degree of ease children experience as they move from one setting to another and into their new roles.

Such literature identifies the need for the involvement of stakeholders across all sectors in transition planning and implementation to ensure thoughtful deliberation of beliefs and practices to build strong links, support systems and relationships through transitional programs (for example: Dockett & Perry, 2007; Woodhead & Moss, 2007; Arnold et al., 2007).

Thus, since the 1990s, researchers have come to understand that transition for young children is a ‘multi-layered and multi-year process involving multiple continuities and discontinuities of experience’ (Petriwski, Thorpe & Tayler, 2005, p. 63). Consequently, much has been written about the importance of a smooth transition between home and pre-school settings (Rimm-Kaufman, Pianta & Cox, 2000; Pianta, Rimm-Kaufman & Cox, 1999) and between pre-school settings and school (Fabian & Dunlop, 2007; Woodhead & Moss, 2007; Dockett & Perry, 2003; Yeboah, 2002). However, there is a dearth of research on the transition of children from long day care settings to pre-school settings.

In WA long day care centres are one of the main providers of long day care. Long day care centres are generally open 10 hours a day, five days a week, 48 weeks of the year, and cater for children between birth and age five.

They have a staff–child ratio of 1:10 for children 36 months to school age and are required to have at least one diploma-qualified staff member. Children turning age four can access a non-compulsory kindergarten program for four half-day sessions each week, staffed by qualified teachers and educational assistants, with a staff–child ratio of 1:10. Kindergarten programs are often conducted on school grounds and administered by the school principal. In order to attend a kindergarten program, many children in WA move between long day care centres and kindergartens, within a day and/or across a week. Thus, in this study we explored kindergarten teachers’ beliefs, knowledge and transitional practices, in order to develop a deeper understanding of the nature of transition and the continuity that currently exists between long day care centres and kindergartens in WA.

**Method**

Based on the belief that individuals hold differing perceptions of their experiences (Schwandt, 1998), we adopted a mixed methods framework to examine kindergarten teachers’ perceptions and practices of the transition process for young children moving from long day care to kindergarten. Using quantitative and qualitative methods, we sought to explore the following research questions:

1. What do kindergarten teachers believe about the importance of transition and continuity?
2. What are the current transition and continuity practices used by kindergarten teachers?
3. To what extent do kindergarten teachers have a professional relationship with long day care professionals?

In the first phase of the research, early childhood teachers from a convenience sample of 200 kindergartens located in the metropolitan regions of Perth, Western Australia were invited to complete a survey about transition. The kindergartens were chosen because of their close proximity to day care centres their students had attended prior to starting at the kindergarten. The first section of the survey was designed to elicit information about the participants’ professional qualifications, work experience, and
professional development. The second part of the survey focused on participants’ perceptions of transition and continuity, the practices they employed, and their professional relationships with long day care centres. Where appropriate, participants were asked to elaborate on their responses. Their written comments gave us further insights and enabled us to identify key factors that appeared to impact on continuity between the two settings. Altogether, 38 kindergarten teachers completed the survey. Although this is a relatively small sample, we see this as the basis for a larger study.

In the second phase of the study we conducted telephone interviews with a random sample of 14 of the original 38 participants who returned their survey. The phone interviews built on the survey data and were developed to provide further in-depth information about participants’:

- definition of continuity and how they created continuity
- knowledge of, and professional relationships with long day care professionals
- key factors that impacted on continuity between the two settings.

**Findings**

The findings from both the survey data and phone interview data are presented in the following section. Information about the participants is presented first, followed by findings under each research question.

To begin with, survey participants were asked about their professional qualifications, work experience and professional development. All participants were female, aged between 41 and 50 years, and had taught at their present location for an average 5.36 years. Participating kindergarten teachers had either a Bachelor of Education degree in Early Childhood (37%), a Graduate Diploma in Early Childhood (16%), a Diploma in Teaching in Early Childhood Education (11%), a Bachelor of Education degree (Primary 5%), or a related qualification such as a degree in Social Science or Nursing with an additional early childhood qualification (31%).

In response to a question about professional development (PD) in the past five years, participants stated they had attended a variety of PD courses. However, although these PD courses may have referred to transition and continuity, only one participant had attended a PD session specifically related to transition.

**Research question 1: What do kindergarten teachers believe about the importance of transition and continuity?**

In this section of the survey participants were asked: ‘Do you think continuity of experience from long day care to kindergarten is important?’ Please give reasons for your answers. The majority of teachers (87%) thought continuity between LDC centres and kindergartens was important. Reasons given for the importance placed on continuity of experiences included facilitating children’s transition between settings (37%), facilitating ongoing learning and development of the child (18%), facilitating social and emotional development through consistency in the context, understanding roles and expectations of the two settings (26%), recognising prior learning experiences and attainment through the transfer of information (16%), and the increased attendance of children at LDC centres (8%).

The following comments capture the beliefs of many of the teachers who wrote at length about why they thought transition is important. For example, ‘Previous experiences of children are building blocks. We aim to find out where children are at developmentally—what they know and what they are interested in. It is our role to build on what children have learned previously in day care’ (KS68), and ‘I hope that the children can continue to build upon and strengthen their foundations of learning’ (KS70). Others emphasised the importance of emotional and social security: ‘Young children need continuity and support to progress and develop. They need familiar experiences and settings to feel secure and safe’ (KS125). Another commented, ‘Children need to feel comfortable in settings and that it helps with separation anxiety and social interactions’ (KS27). Others wrote about transfer of records and knowledge of prior experiences: ‘A flow-on of records on child progress will ensure better continuity’ (KS19), and ‘It would be helpful to know what experiences day care children have had from a planning point of view’ (KS127).

Five of the surveyed kindergarten teachers (13%) indicated that continuity from LDC centres to kindergarten was not important. They believed that the different roles the two settings played in children’s lives and the parents’ expectations of these settings for their children, minimised the importance of continuity. One teacher argued, ‘Parents have different expectations. Day care cannot give the same quality of experiences compared to kindergarten due to number of children, physical setting and teaching’ (KS74). Another teacher wrote, ‘Day care should be a more family-oriented setting whilst kindy is beginning to focus on educational experiences within a school-type setting/environment’ (KS202).

In a study of this kind it is important to identify how teachers define continuity, as different meanings may lead to different practices. The phone interview participants were asked about their definition of the term ‘continuity’. The 14 teachers provided various definitions, all associated with the provision of a similar program or having similar routines and expectations. Many referred to continuity as being ‘Similar routines and expectations—always pack away. Also having a
sense of similar boundaries’ (KT11). Continuity was also defined as exchanging information about the children’s development, consistency in staff, and knowledge of children’s time and frequency at the LDC centre. One teacher commented that continuity was about ‘children being able to go from one place to another with as little stress as possible’ (KT8), and another defined continuity as ‘building on what they have done in the LDC centre’ (KT7).

**Research question 2:** What are the current transition and continuity practices used by kindergarten teachers?

In this section of the survey participants were asked several questions about their transition practices, starting with ‘What types of things do you do to ensure your children have a smooth transition to their kindergarten setting?’

Survey participants identified a range of practices they implemented in kindergarten settings to ease the transition. Responses included the involvement of parents (47%) and children (31%), modifications to their teaching program (40%), specific teaching strategies (16%), and collaborating with LDC centres (11%). Parental involvement included meeting with parents, distributing an information booklet, and encouraging parents to stay on the first day. Several participants indicated that children were encouraged to visit the kindergarten prior to the start of its new year, or were greeted individually on the first day, particularly when they came from a LDC centre and did not have a parent/carer present. A strategy widely practised by participating kindergarten teachers (40%) was to conduct orientation days whereby prospective students visited the kindergarten centre and school for short periods, followed by a staggered start at the commencement of the school year. Others revealed that they provided clear expectations, taught rules and boundaries, and fostered a welcoming environment to assist the transition process. Only four of the 38 survey participants reported that they liaised with LDC centres, either talking to the pick-up person or attending meetings with workers from nearby LDC centres.

Next, kindergarten teachers were asked: ‘Do you think the children from the day care setting have a continuous experience in their new kindergarten setting?’

Interestingly, 21% of survey participants indicated that either they were unsure if continuity existed or they felt that continuity existed ‘in-part’. In addition, 63% of kindergarten teachers indicated that continuity did not exist in their current situation. Almost a third of these teachers attributed different expectations and roles of the two settings to this lack of continuity. Several written comments are echoed in the following statements: ‘At kindergarten they have more rules to abide by and with fewer staff ratio, children need to learn to be part of a larger group’ (KS140), and ‘We find that the children have difficulty at times with the formal side of school’ (KS200).

The teachers also cited lack of communication between the two settings and parents (11%), children’s own expectations (5%), and behaviour (3%) as factors impacting on the children’s sense of continuity. As one participant commented, ‘Not prepared for kindy experience. Commonly assumed by parents that day care and kindy are ‘the same’ type of care” and think day care prepares them for kindy. Day care commonly assumes parents will take a role preparing their children for the changes for schooling’ (KS61).

In complete contrast, when teachers felt children experienced continuity, they identified similarities between the two settings as key factors, for example, ‘Children who come from day care settle easily into the kindergarten setting. They have the same ideas of what being part of a group entails and to socialise with others’ (KS125), and, ‘The children from day care are used to groups, mat sessions, helping pack away, and this makes some of the routines of school less alien’ (KS136). In addition, teachers revealed that they relied on parental input and involvement (47%) as a means of becoming informed about the child’s prior experiences in long day care and/or other care and education settings.

In order to elicit more information about the nature of transition and continuity practices, the 14 phone interview participants were asked to describe and explain the practices they used. Seven indicated that they communicated with LDC professionals and parents or talked to the children about what they had done in LDC centres. The teachers claimed this gave them insights into the children’s development and enabled them to build on the children’s experiences. Continuity was enhanced for these teachers when they had knowledge of how LDC centres operated. As one participant stated, ‘Knowing what long day care centres do helps’ (KT5), as does ‘Having a shared vision and a hands-on approach’ (KT10). Awareness of the language and literacy practices in the LDC centre was identified as a way of continuing a routine and building on what children already know, ‘Through storytelling and turn taking’ (KT1), and, ‘[We] build on known nursery rhymes and lots of oral discussion’ (KT8). Individual participants also referred to continued ‘exposure to books’ (KT9) and ‘reading favourite stories’ (KT12) as part of building continuity.

In contrast, four of the 14 phone interview participants acknowledged that they did not specifically set out to create continuity between the two settings, with three stating ‘I don’t think that we do’ (KT6, 8, 13). Interestingly, the fourth teacher reported that she ‘had never been asked to have an influence in day care’
although she attended local network meetings for professionals working with children from birth to four years (KT1).

To explore the extent to which teachers planned their curriculum using knowledge of the children's achievements at the LDC centre and shared records of development, we surveyed participants on their curriculum planning and records of children's progress. The survey data showed that kindergarten teachers took responsibility for the curriculum they developed and implemented in their centres. While more than half of the kindergarten teachers (55%) referred to using the state-mandated Curriculum Framework (1998) as a basis of their planning, the majority of participants (71%) reported that they based their curriculum on meeting the children's needs and interests, as well as on their own experiences and knowledge. The overlap in the statistical data suggests many use both approaches. In addition, kindergarten teachers described collaborating with others to design their program, but not specifically referencing LDC centre programs.

Furthermore, evidence from the survey suggests that participants relied on self-constructed forms of assessment, such as observations, anecdotal notes and checklists, to assess and record the progress their children made overall, including development in literacy and numeracy. The majority of kindergarten teachers (97%) said they share records of the children's development with parents, co-workers and administrators. They also passed this information onto the child’s next teacher. In WA children move from kindergarten to pre-primary, which offers non-compulsory programs for five-year-olds. However, none of the kindergarten teachers surveyed had requested or received records from the associated LDC centre.

Research question 3: To what extent do kindergarten teachers have a professional relationship with long day care professionals?

In the survey the teachers were asked about their professional relationship with LDC centres, communication with LDC centres and visits between the two settings. In the phone interviews the teachers were asked: ‘How do you define a professional relationship? What would a professional relationship entail? Please elaborate on communication between the two settings.’ Analysis of the survey data and phone interviews for question three revealed three key factors that appeared to impact on continuity:

- Communication through professional relationships.
- Knowledge, attitudes and expectations of professionals working in the two settings.
- Structure of the two settings.

Communication through professional relationships

More than a third of the surveyed teachers said they had a professional relationship with the LDC centre (37%) and this relationship was central to effective continuity. This relationship was fostered through phone calls, email and personal contact. One teacher wrote about making additional contact through a newsletter: ‘We have contact with people who drop off and pick up children every day and we sometimes provide our newsletter, if excursions, incursions are on’ (KS122). Several teachers reported that they had daily interaction with LDC professionals, which helped the children to make the transition between the two settings. However, although communication was seen as important to continuity, analysis of the survey data indicated that the majority of kindergarten teachers (89.5%) had never visited the long day care centre their students had attended, and that they had never considered inviting their counterparts to their kindergarten.

The majority of kindergarten teachers who participated in the phone interview admitted a lack of communication between the LDC centre and the kindergarten, and acknowledged this as a barrier to effective continuity practices. One teacher noted that she had a child–parent communication book for each child, but not for the LDC centre. The lack of communication about pedagogy and curriculum design, and the fact that there was no sharing of information between the two settings, were also perceived to be problematic.

For two participants, lack of communication with long day care staff was seen as a result of time constraints; another participant cited lack of response by LDC professionals to invitations to visit the kindergarten. Only two teachers reported inviting the LDC centre professionals to their kindergarten, and one cited the importance of sharing cultural experiences: ‘Liaison between the long day care centre and kindergarten is important, sharing information, because we are an Indigenous school—cultural awareness is important’ (KT6).

In describing a professional relationship, the kindergarten teachers stated that such a relationship involved either informal talk, including chats at drop-off and pick-up times, some form of meeting or a sharing of information. Several of the kindergarten teachers mentioned the high turnover of LDC professionals as problematic, particularly with a different person from the LDC centre dropping off and picking up children at the kindergarten each day. This was perceived to be a barrier to effective continuity, as building relationships was seen as requiring regular contact over a long period. Another teacher identified the importance of location and communication, suggesting that, if the LDC centre and the kindergarten were located near each other, or housed in the same building, this would make communication between staff easier and more likely (KT7).
Knowledge of settings, attitudes and expectations

Analysis of the surveys and phone interviews suggests that attitudes to and expectations of what each setting would provide impact on continuity. In the phone survey, teachers commented that similarities between the two settings were central to a smooth transition. Comments included: ‘Those children that have attended [LDC] experience a smooth transition because expectations are the same’ (KT22) and ‘[Children experience continuity] because day care has routines, structured activities and similar games, play and rules to kindergarten’ (KT41).

However, differing expectations held by some of the kindergarten teachers about the two settings, especially in relation to behaviour management, were also evident. Comments included: ‘Discipline issues, long day care centres have different ways of dealing with sharing and playing’ (KT7); and ‘There are different expectations in long day care centres; there are not consistent boundaries’ (KT11). Differences between the settings were also perceived to lead to difficulties for some children. For example, ‘Doing things at the same time together and not having as much choice not to participate [causes difficulty]’ (KT200), ‘At kindergarten they have more rules to abide by and with fewer staff/children ratio, children need to learn to be part of a larger group’ (KT140). In addition, some kindergarten teachers commented on the need for LDC centres to incorporate perceived kindergarten practices, ‘Long day care centres should have more non-negotiable tasks and behaviour management plans’ (KT8).

Two phone participants also alluded to perceptions and divisions between the two services, with one stating, ‘There is a lack of mutual respect between the two services’ (KT6) and the other commenting, ‘Are people really interested in what the other does?’ (KT12).

Structures

Surveyed participants also reported that many children moved between the LDC and kindergarten in the same school day and several times during the week. This was identified as a concern for many of the kindergarten teachers who experienced this practice. Several commented on the constraints associated with children attending kindergarten for four half-days, then returning to the long day care centre for the remainder of the week. They perceived this as highly problematic for continuity, and indicated that communication between the two settings was essential to ensure the children felt a sense of continuity with such a disrupted daily and/or weekly experience. The following comment sums up many of those written responses to the survey: ‘In some instances the child spends most or some of the week in the day care and it is important to discuss matters with the carers as well as the parents’ (KS7).

Discussion

Whereas most of the kindergarten teachers in this study considered transition processes and continuity to be important, continuity and collaboration between the two settings appeared to be limited. Factors such as a lack of planned and deliberate action to promote effective transitions, lack of communication, and the differing expectations of each provision appear to be counterproductive to the development of continuity between long day care settings and kindergarten. Furthermore, the transient nature of some long day care staff would appear to hinder the ability of early childhood professionals to develop strong and lasting collaboration and relationships.

Understanding transitions and continuity

Although the majority of kindergarten teachers in this study claimed that continuity was important, this was not apparent in their practices, which ranged from fragmented to non-existent. Campbell Clark (2000) asserts that how well or effectively individuals cross borders into different settings is directly influenced by the border guards (in this case, early childhood professionals). It seems that, if early childhood professionals recognised continuity as a key component of their role and had a deeper understanding of models and strategies for enhancing transitions, more could be done to help children to improve their movements across settings. In particular, acknowledging and responding to barriers created by institutional, structural and administrative differences and the division between care and education would assist in supporting continuity of experiences for children.

Sharing kindergarten knowledge, information and practices

The study highlighted an apparent lack of knowledge and understanding regarding the daily operation, curriculum implementation and roles of professionals working in LDC centres. Few of the kindergarten teachers had visited LDC centres, or invited those working in LDC centres to visit their kindergarten. In addition, evidence suggests that the kindergarten teachers appeared to lack professional development targeted at assisting children’s transition. Indeed, only one participant indicated that she had attended professional development sessions on the transition process. Some kindergarten teachers appeared to believe that settings operated differently and that parents had different expectations of settings even though both
LDC and kindergarten professionals work with the same-age children. This is a concern, as the literature suggests that ongoing professional development and interagency collaboration are necessary components of the transition process (Freeman & King, 2003; Kagan & Neuman, 2003).

Many participants identified a range of practices to assist children’s transition—drawn from parental information, their own personal experiences and their professional background. However, a lack of familiarity with LDC centres indicated they had little awareness of the experiences their students were exposed to prior to entering kindergarten. Yet Campbell Clark (2000) suggests that, when children cross borders, such as moving daily across settings, knowledge of the other setting and supportive communication between the two can moderate any ill effects of the new situation.

Although communication between the two settings was seen as important, in practice professional relationships appeared tenuous, where communication tended to be fragmented, informal or irregular, with the majority of participants neither initiating nor maintaining systematic contact. Evidence suggests that lack of communication between the kindergarten teachers and LDC professionals limited their capacity to negotiate a curriculum which promoted continuity of experience, a feature strongly attributed to effective transition programs (Dockett & Perry, 2003). Time constraints appeared to be an issue; participants commented that time factors and work commitments limited their capacity to connect and exchange information. Given that the literature identifies interagency collaboration as a significant factor in the development of quality transitional programs (Freeman & King, 2003; Kagan & Neuman, 2003), the lack of communication is a major concern.

Discrepancies between the participants’ expressed beliefs and the fragmentation of practice were also evident from the data. As stated, many participants believed that communication between the two settings was important, yet few engaged in practices that encouraged regular communication and the development of professional relationships. Indeed, several teachers commented on the need for LDC centres to modify some of their practices to resemble kindergarten practices, suggesting a one-way relationship. Recent research suggests there is an increasing trend for relationships between care and education to be one-sided, with education dominating. Woodhead and Moss (2007) remind us that effective transition can work only where there is a strong and equal partnership.

In addition, whereas teachers made efforts to track children’s progress, particularly in literacy and numeracy development, they did not access information from LDC centres to build a profile of children’s developmental paths. The kindergarten teachers, unfamiliar with the programs offered by local day care centres, generally did not consider these prior learning experiences when planning and implementing their programs. Briggs and Potter (1999) argue that kindergarten teachers should take into account children’s past experiences in order to minimise change and reduce stress. Greater alignment between curricula and pedagogy through a common learning framework, strong administrative links and joined-up services is recognised as a major policy initiative that is needed to address issues of continuity and transition. The Early Years Learning Framework (DEEWR, 2009) provides a starting point to address some of these concerns.

### Movement of workforce, qualifications and structures

Several teachers cited the high turnover of the LDC workforce as a barrier to effective communication. The movement of the LDC workforce discourages practices needed to support transition and promote continuity. Relationships and supportive communication practices are hampered by this dislocation and make it difficult to build collegial practices across centres and, more broadly, across the sectors. There are historical differences in understanding the nature and role of care and education, and these may be responsible, to some degree, for a level of discontinuity and a creation of barriers to continuity of experience. Part of this divide is a result of different pedagogical practices inherent in the programs the children participate in. This may come from differing qualifications of care professionals and kindergarten teachers from two-year diplomas to four-year university degrees. A structural barrier is also evident at the government level in Western Australia because settings for children from birth to five years are provided by two different government departments, adding to the discontinuity of settings, expectations, funding, and licensing requirements.

### The child, transitions and early childhood professionals

This study noted that children make both horizontal and vertical transitions and are being asked to cross a number of borders daily, from home to long day care to kindergarten and elsewhere. Lam and Pollard (2006) comment that, in Vygotsky’s view, children’s development and their understanding of the world are shaped by historical, cultural and institutional contexts and that moving across settings children may be confronted with completely different cultural models. Further, Lam and Pollard (2006) describe children as building a sense of identity while moving across settings as they shift from the ‘child’ at home...
to the ‘pupil’ at school. Questions to be asked include: How do children see themselves in long day care? What identity are they being assisted to build in that setting? Is it one that allows for a smoother transition to kindergarten? Is it the ability of children to learn the discourse, expectations and boundaries of each setting that eases transition? The majority of kindergarten teachers in this study did not appear to assist children with active agency in transition processes, and some did not regard children’s movement between settings as their concern.

Conclusion

The move to school is recognised as one of the key rites of passage in the lives of young children. For many children in WA, kindergarten may be the first step into the school system, especially if it is located in the school grounds. Creating conditions that promote and support continuity and smooth transitions requires personnel involved in this process to be proactive and thoughtful about provision of experiences and exchange of information. The current Western Australian State Government’s initiative to establish integrated centres for children from birth to five years is seen as a major step forward in developing consistent standards, and providing high-quality interventions to meet the needs of families and community. Furthermore, the national Early Years Learning Framework (DEEWR, 2009) currently being implemented across all settings (and jurisdictions) for children from birth to five years, emphasises successful transitions as being central to children’s sense of security, confidence and self (p. 16). Regardless of these positive trends, in WA and many other Australian states, different government departments administer care and education for children from birth to five years, which makes continuity of settings, funding, and licensing requirements problematic. Furthermore, qualifications for early childhood professionals working with same-age children differ. Unless services are inter-connected and common pedagogy and goals developed and adopted, continuity is likely to remain haphazard or non-existent.

For continuity to exist between the two settings, early childhood professionals from both settings need to collaborate, sharing their expertise and knowledge of the child with each other. Opportunities where early childhood professionals are exposed to their counterparts’ settings would assist in developing a degree of familiarity with their children’s prior experiences, as well as awareness of the expectations developed within those settings. For this to take place, communication, collaboration and time must be taken into consideration, and further investigation should be conducted into devising ways to make this happen.

In this research we found that settings in WA kindergartens are fraught with discontinuities, and that transitions from LDC centres to kindergartens are somewhat haphazard. Early childhood professionals have the responsibility of ensuring that young children experience a smooth transition, equipping them with the skills necessary to cope with new situations and building on existing knowledge and skills to enhance active agency. Research has identified that, for transition to be smooth and seamless, some form of continuity and collaboration between settings is at the very least desirable (Dockett & Perry, 2003) and at best imperative. Given the importance of collaboration between professionals, our study was limited by the exploration of one group of professionals involved in transition and continuity in WA. Further research needs to be undertaken to explore the perceptions and practices of long day care professionals who work in settings that young children attend before they enter kindergartens in Western Australia.

References


Introduction

This paper presents research emerging from our observation that increasing numbers of teachers reported students performing at high levels over recent years on the Performance Indicators in Primary Schools Baseline Assessment (PIPS-BLA). PIPS-BLA stands for Performance Indicators in Primary Schools Baseline Assessment, an assessment of literacy and numeracy of students in the year prior to Year 1 in the primary school. Teachers who participated in workshops designed to support the use of PIPS-BLA information during 2002–2008 were responding to informal questions about the number of students in their class who reached a set of items corresponding to a sophisticated level of reading and comprehension. The steady increase in the number of students reported anecdotally to be reaching this level led us to examine the performance data of students over this period.

Carefully done, standard psychometric testing is largely accepted as a valid and useful part of the identification of gifted students (Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001). Achievement tests have also been shown to be the best single predictor of future achievement (McLeod & Cropley, 1989) and research studies have shown that scores are fairly stable by school age (Robinson and Weiner, 1991).

We believe that, if the numbers of students with high on-entry performance levels were increasing, there are important implications for the provision of appropriate programs for students in the early years of primary school. The provision of individualised curricula in the mainstream classroom to support such students from the start of their formal schooling is generally accepted (Porter, 1999; Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001; Torrance & Sisk, 1999). Specialised provision for children beginning school (and earlier) has been shown to result in positive outcomes for these children (Porter, 1999; Robinson & Weiner, 1999; Torrance & Sisk, 1999). The research evidence clearly shows that concerns about negative social and emotional developmental outcomes are unfounded (Porter, 1999; McLeod & Cropley, 1986; Robinson, 2008). The identification of high-achieving students as they enter school is therefore important for teachers concerned with developing the best curricula for the full range of abilities that occur in their classes. We argue that the PIPS-BLA is one important valid and reliable tool that can help teachers achieve this goal.
Background

PIPS-BLA was developed by Professor Peter Tymms and his colleagues at Durham University, UK (www.cemcentre.org) as one of a suite of assessments of the literacy and numeracy performance of students in primary schools. These assessments are used internationally in 37 countries, and the PIPS-BLA was introduced to Australia by Helen Wildy in 2001. Since that time, educational authorities—the Tasmanian Department of Education and the ACT Department of Education, the Catholic Education Office of Tasmania and the Catholic Education Office of Western Australia—have adopted PIPS-BLA for all primary schools. Individual schools in the state, Catholic and independent sectors in all states and territories have registered each year since 2001 to use this assessment. In 2009 PIPS-BLA was used to measure the early literacy and numeracy of more than 27,000 students in 814 Australian primary schools across all states and territories in 22 of the 24 educational sectors. PIPS-BLA is offered by The University of Western Australia under the direction of Professor Helen Wildy.

PIPS-BLA is a computer-adaptive interactive assessment administered to students within the first few weeks of their starting the year prior to Year 1. The assessment is administered a second time towards the end of that year. The assessment takes from 15 to 20 minutes for each student and is conducted by the classroom teacher, usually in the classroom setting while the rest of the class is engaged with another teacher or assistant.

The assessment consists of three measures: Reading, Mathematics and Phonological Awareness. Together these predict the level of success at school in the early years (Tymms, 1999), and more recent evidence shows good predictive validity up to the end of primary education (Tymms, Merrell, Henderson, Albone & Jones, 2007).

The Reading scale comprises four sets of items: identification of named objects within a series of pictures; ideas about print; letter identification (fixed order of upper- and lower-case letters); word recognition and reading (words that occur with high frequency in most reading schemes). The Mathematics scale comprises ideas about mathematics; counting and numerosity (students are asked to count number of objects and repeat the number when the picture has disappeared from the screen); sums (addition and subtraction problems without the use of symbols); shape identification; digit identification (one, two and three digits); and Mathematics problems (including sums with symbols). The Phonological Awareness scale comprises only two sets of items: repeating words (student hears a word and is asked to repeat it); and rhyming words (student chooses a word from three options, to rhyme with the target word).

The adaptive nature of the assessment is one of its strong features. Items are presented on computer to each student in expected order of increasing difficulty within a screen and, in some cases, across a set of screens. A particular scale is completed when the student responds with incorrect answers to either three consecutive items or four items in a screen. At both the start and end of the year, students attempt new items until the difficulty of the items exceeds their ability to complete them correctly. At the end of the year students begin the assessment at the point they reached earlier in the year. Students are not confronted with items that are beyond their ability, nor are they required, at the end of the year, to re-do those items that they answered correctly at the start of the year.

Raw scores are converted to standardised scores, using means and standardisations for all students in a cohort (based on location, state and territory). Raw scores are available immediately on completion of each student’s assessment, and standardised scores and class data can be downloaded within 48 hours of the completion of the class assessment.

Schools are provided with feedback, showing raw and standardised scores for Reading, Mathematics and Phonological Awareness. Data is presented in tabular format and also as plots showing centrality and spread, composite bar charts showing achievement, and line graphs and scatterplots showing value-added scores indicating progress. For example, plots use standardised scores to show not only the wide spread of students’ performance at the beginning of the school year within one class group and the relative performance of students on Reading and Mathematics scales, but also the position of the middle half of the group. The line graphs for Reading and Mathematics show the wide range of students’ performance on entry and also at the end of the year. Then graphs using raw scores show how much each student has progressed during the year, compared with the mean for the class and with the cohort.

Studies have shown the scales to be internally reliable with Cronbach’s alphas of 0.95, 0.93 and 0.86 for Reading, Mathematics and Phonological Awareness, respectively (Merrell & Tymms, 2007). More importantly, Reading and Mathematics have similarly high test–retest reliabilities. Phonological Awareness is lower (0.52), possibly because teachers are required to make judgements about the extent to which students accurately repeat words and non-words. Performance on the Phonological Awareness scale is reported as part of the start-of-year feedback, and teachers notice the relative strength of students’ performance on Phonological Awareness compared with Reading and Mathematics, which is interpreted as a possible indication of auditory or auditory processing problems.

The data representations provided by PIPS-BLA are not always familiar to teachers who use this assessment.
for the first time. To assist teachers, literacy and numeracy coordinators and principals to interpret the data, we offer workshops at the start and end of the year. Participants bring their data to the workshops and use it to ground their discussion. A PIPS-BLA feedback DVD is available to help with data interpretation.

During the half-day workshops, participants discuss the structure of the assessment, its predictive validity, face validity and reliability. Using their own school’s data they identify high- and low-performing students, and share ideas about the kinds of programs that are appropriate for students at various levels of performance as they enter school. The information from teachers was of particular interest because we knew that reports on the performance of 15-year-olds across Australia on the international assessment of literacy, PISA, indicated that high-end performance was declining relative to other countries and in contrast to the steady or increasing performance of students at other levels. These two pieces of information seemed at odds, and we sought to check these impressions, using performance data from Reading and Mathematics on the PIPS-BLA. If we were to show that students were entering school with increasingly high levels of literacy and numeracy when these high achievements were declining by the age of 15, then we would have grounds for interrogating the provision for high-achieving students in the intervening years of schooling. We are particularly interested in the provision for students in the year prior to Year 1 for whose performance we have seven years of evidence.

Our research sought to examine whether anecdotal data was corroborated by the PIPS-BLA data. Specifically we wanted to check whether the numbers of students reaching high Reading items and high-level Mathematics items were increasing from 2002 to 2008. Although the increasing number of teachers reporting high-achieving students was apparent across Australia, for this study we used the data only for Western Australian students \( n = 59,013 \). Data was collected for Catholic, independent and government schools. We selected start-of-year data only, because this better represented what students came to school knowing and being able to do. The psychometric properties of the Reading and Mathematics scales were checked before examining high performances in Reading and Mathematics. Each analysis is treated in turn in the next section.

Analysis

Reading

In order to help identify the highest-achieving students, the items in the Reading scale were first classified into pre-Reading items and Reading items. The Reading items were those involving sentences rather than isolated words. In principle and empirically, almost all Reading items are more difficult than pre-Reading items and so successfully reaching the Reading items (the Stories and Walking to School subscales) demonstrates a more advanced level of development. For example, Figure 1 shows a pre-Reading item and Figure 2 shows a Reading item.

Students were then selected on the basis of having scored at least 1 on the Reading subscales. The items cover a range of difficulties, with the maximum possible score being 36.

Figure 1: Example of a pre-Reading item: Can you point to a full stop?

Figure 2: Example of a Reading item: Playing makes him sleep.

Before examining the performance of these students, we checked the psychometric properties of the Reading scale using a subset of 20,030 students from the sample of 61,567 children from 2001 to 2008. 2001 was the first year the PIPS-BLA was administered in Australia, and that year some Year 1 students were tested, in addition to students in the year prior to Year 1. Therefore, only high-scoring students from the years 2002 to 2008 were selected for inclusion in the study. However, data from all eight years was used to establish the psychometric
properties of the scale, since data from more advanced students in Year 1 was able to provide more reliable estimates of item locations for the more difficult items.

To form the subset, we randomly selected students from each year to match the sample size of the year with the smallest number of students (approximately 2,500 students per year). The responses of these students to all Reading scale items were analysed using the RUMM2030 software (Andrich, Sheridan & Luo, 2008) to establish whether they may be considered as measuring a single variable at this level of scale; that is, whether they are internally consistent and provide reliable person measures.

We found a small number of items did not fit the model. The Item Characteristic Curve (ICC) for the least well-fitting of these is shown in Figure 3 (Playing makes him sleep).

This item over-discriminates. Over-discrimination may occur when sub-groups of persons have some special advantage compared with others; for example, more able students may have been taught the words occurring in this sentence, perhaps by parents. We decided against eliminating from the analysis items with possible misfit owing to small numbers of responses, because these were the very items and persons of research interest to us. We then checked for Differential Item Functioning (DIF), whether the construct has the same meaning for the two Gender groups. Three items showed DIF according to Gender group: Point to a toadstool, Point to some jewellery and Write your name. Girls performed better than boys on these items even when girls and boys had the same total scores. When these three items were omitted from the analysis, there was no further DIF. The remaining items were accepted as measuring a similar construct for girls and boys. The Person Separation Index for the scale was 0.90, indicating high reliability for this scale.

Having established the robustness of the set of Reading items, we then categorised all 59,013 students from 2002 to 2008 according to their scores on the Stories subscale in which raw scores varied between 1 and 20, and on the Walking to School subscale in which raw scores varied between 0 and 16. In the Stories subscale, students are asked to read a series of sentences, each of which is presented on successive screens. They are scored according to the number of words in each sentence they are able to read correctly. In the Walking to School tasks, students are asked to choose the correct word from three alternatives given within a sentence. An example of one item is: Two/to/too minutes later Emma was ready … There were 4,030 students (6.80% of the entire sample of Western Australian students 2002–2008) who fitted this criterion. The score categories to which students were assigned are shown in Table 1. The table also shows the mean person locations and standard deviations on the entire Reading scale for each category of persons. The difference amongst all Reading categories was statistically significant ($F = 3471.85$ (4,1), $p < 0.001$) as were differences between each pair. As expected, the mean person locations increase with increasing level of category (increasingly able performance), and number of students decreases with increasing level of category. For example, Table 1 shows that, while 1284 students (2.18 % of all 59,013 students) obtained a score of at most 5 on the easiest Reading items (mean location 1.23 logits), only 540 (0.92 % of all students) were able to score on Walking to School, the subscale which contains the most difficult items (mean location 3.18 logits).

Table 1: Numbers of students in each category of Reading, percentages (of $n = 59,013$) and their mean person locations (in logits) and standard deviations on the Reading scale.

<table>
<thead>
<tr>
<th>Category</th>
<th>Score range</th>
<th>$n$ (%)</th>
<th>Mean person location (Std Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 to 5</td>
<td>1284 (2.18)</td>
<td>1.22 (0.35)</td>
</tr>
<tr>
<td>2</td>
<td>6 to 10</td>
<td>894 (1.52)</td>
<td>1.65 (0.19)</td>
</tr>
<tr>
<td>3</td>
<td>11 to 15</td>
<td>720 (1.22)</td>
<td>1.94 (0.15)</td>
</tr>
<tr>
<td>4</td>
<td>16 to 20</td>
<td>592 (1.00)</td>
<td>2.24 (0.21)</td>
</tr>
<tr>
<td>5</td>
<td>Over 20</td>
<td>540 (0.92)</td>
<td>3.18 (0.66)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4030 (6.80)</td>
<td>1.86 (0.72)</td>
</tr>
</tbody>
</table>

Figure 4 displays the person and item distributions for the Reading scale. Because this analysis included only those students scoring on the Reading items involving sentences, the distribution of persons is located at the high end of the person/item location continuum, as would be expected. There is a small group of students who score beyond the most difficult items in the scale, an indication that even more difficult items are required to measure some members of this group of very high performing students reliably.

By rearranging Figure 4 with the display of person
distribution along the vertical axis, and listing examples of individual items, we now present Figure 5 which shows the types of items these high-achieving students know and can do. For example, students in the highest Reading category (category 5), with a mean location of 3.18 logits, are able to select the correct response in the Walking to School item *Emma was ready to love/leaf/leave* … (coded WT223 in Figure 5) and also in *Yasir was wear/wearing/wore* … (coded WT228). Some of these high-achieving students can also correctly respond to the sentence *Emma and Mrs Mack were/where/wear walking* … (WT226). The most able of the high-achieving students can successfully complete items such as *She/they/them stopped at the shop* … (W227), and *they carry/carried/care on walking to school* … (WT234). Those in the lowest category of high-scoring students can read the sentence *The dog has got a red ball* (coded St204).

Figure 5: Item map for Reading.
We proceeded with our analysis by examining whether there were differences in mean locations for Gender and Age of starting school. These findings are presented in Table 2.

First, we were not surprised to find significant differences by Age of starting school (F = 4.56 (8.4), p <0.001). Theoretically, mean locations should increase with increasing age, and therefore this finding also provides evidence for the validity of the scale. Students in Western Australia typically start school the year prior to Year 1 between the ages of 4.5 years and 5.5 years and we notice that the majority of students in our sample of high-performing students are in this age range. We were surprised to find that the average student in the youngest age group (4.49 years or less) is as able as the average student in the age group 5.50 to 5.74 years. We expect that the youngest students have started school at a younger than usual age because of their already advanced performance. There was no category by Age interaction—the pattern of mean locations across category was similar for all Age groups.

Second, we examined Gender differences. There was a significant category by Gender interaction indicating a different pattern of difference across category between males and females. Although males have lower means in every category, their overall mean is higher: this is likely owing to a few males with very high scores (higher than the highest-scoring females) which affect the overall mean. We note that males scoring higher than females on average is the reverse of the case with the full achievement range of students, where females have a significantly higher mean score than males. We also note that there is a higher proportion of females (57.62%) than males (42.33%) identified as high scorers.

Mathematics

As for the Reading analyses, we identified as high-achieving students those who correctly answered items of a certain level of difficulty or above. We distinguished students who scored 6 or more on the combined Maths and Sums B subscales, which contain the most difficult items in the PIPS Mathematics scale and which include items involving computations. The group of 5,261 students who met this criterion constituted 8.92% of the total sample of 59,013.

The psychometric properties of the Mathematics scale (internal consistency and reliability) were again checked using Rasch analyses with the subset of students from 2001 to 2008. A few items did not fit the Rasch model but, on the whole, items showed increasing values across person locations. The worst-fitting item, one that does not discriminate amongst person locations, is shown in Figure 6. As may be seen, it is a relatively easy item for all students, no matter the level of their performance on the scale as a whole.

Table 2: Mean person locations for high-scoring Readers (five categories) by Age group and Gender. (Percentages are relative to the sample n = 4030).

<table>
<thead>
<tr>
<th>Age (yrs)</th>
<th>n (%)</th>
<th>Reading Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>4.49 or less</td>
<td>44 (1.09)</td>
<td>1.25 (0.32)</td>
</tr>
<tr>
<td>4.50–4.74</td>
<td>239 (5.93)</td>
<td>1.14 (0.35)</td>
</tr>
<tr>
<td>4.75–4.99</td>
<td>621 (15.41)</td>
<td>1.18 (0.34)</td>
</tr>
<tr>
<td>5.00–5.24</td>
<td>906 (22.48)</td>
<td>1.20 (0.36)</td>
</tr>
<tr>
<td>5.25–5.49</td>
<td>1354 (33.60)</td>
<td>1.27 (0.34)</td>
</tr>
<tr>
<td>5.50–5.74</td>
<td>588 (14.59)</td>
<td>1.23 (0.36)</td>
</tr>
<tr>
<td>5.75–5.99</td>
<td>140 (3.47)</td>
<td>1.22 (0.34)</td>
</tr>
<tr>
<td>6.00 and above</td>
<td>113 (2.80)</td>
<td>1.32 (0.16)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>n (%)</th>
<th>Reading Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1706 (42.33)</td>
<td>1.19 (0.36)</td>
</tr>
<tr>
<td>Female</td>
<td>2322 (57.62)</td>
<td>1.25 (0.34)</td>
</tr>
</tbody>
</table>
As in the Reading analyses, we checked for Differential Item Functioning (DIF). A small number of items showed DIF according to Gender, in favour of boys. When three of these items involving three digit numbers were omitted, there was no further significant DIF. Again, the remaining items were accepted as measuring a similar construct for boys and girls. The Person Separation Index was 0.81, indicating good reliability for the Mathematics scale.

Having established the robustness of the set of Mathematics items, we grouped the high-achieving students from 2002 to 2008 into two categories, with students in category 1 scoring between 6 and 10 on the Maths and Sums B subscales, and those in category 2 scoring 11 to 20. The lowest score of 6 was chosen because there was a significant increase in the numbers of children scoring 5 or less on these items who were thus judged not to show relatively high levels of performance. As expected, there was a significant difference between the mean locations on the entire Mathematics Scale for these two categories ($F = 3848.43, (1, 1), p < 0.001$) with category 2 students scoring higher than those in the category 1. Table 3 shows the numbers of students in each category.

Table 3: Numbers of students in each category of Mathematics and their mean locations (in logits) on the Mathematics scale. (Percentages are proportions of $n = 59,013$).

<table>
<thead>
<tr>
<th>Mathematics Categories</th>
<th>Score range</th>
<th>n (%)</th>
<th>Mean person location (Std Dev)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6 to 10</td>
<td>4,745 (8.04)</td>
<td>1.34 (0.75)</td>
</tr>
<tr>
<td>2</td>
<td>11 to 20</td>
<td>5,16 (0.87)</td>
<td>3.66 (1.22)</td>
</tr>
<tr>
<td>Total</td>
<td>6 to 20</td>
<td>5,261 (8.92)</td>
<td>1.57 (1.06)</td>
</tr>
</tbody>
</table>

The distribution of person and item locations is shown in Figure 7. Again, because the analysis included only those students with high scores on the Mathematics scale, the distribution of persons is located at the high end of the person/item location continuum. There are, however, fewer students located beyond the most difficult of the items compared with the Reading scale. That the Mathematics scale appears relatively more difficult than the Reading scale was noted in previous analyses (Wildy & Styles, 2008a; Wildy & Styles, 2008b).
Table 4: Mean person locations (in logits), frequencies and percentages (of high-scoring group) for high-scoring Mathematics students by Age group and Gender.

<table>
<thead>
<tr>
<th>Age group (yrs)</th>
<th></th>
<th>Mathematics Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>1.49 or less (0.74)</td>
</tr>
<tr>
<td>4.50–4.74</td>
<td>312 (59.3)</td>
<td>1.08 (0.69)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.56 (1.28)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.17 (0.87)</td>
</tr>
<tr>
<td>4.75–4.99</td>
<td>832 (15.82)</td>
<td>1.18 (0.73)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.35 (1.20)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.31 (0.92)</td>
</tr>
<tr>
<td>5.00–5.24</td>
<td>1316 (25.01)</td>
<td>1.30 (0.75)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.65 (1.10)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.46 (0.98)</td>
</tr>
<tr>
<td>5.25–5.49</td>
<td>1826 (34.69)</td>
<td>1.41 (0.73)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.62 (1.18)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.65 (1.04)</td>
</tr>
<tr>
<td>5.50–5.74</td>
<td>696 (13.23)</td>
<td>1.50 (0.75)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.66 (1.20)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.81 (1.13)</td>
</tr>
<tr>
<td>5.75–5.99</td>
<td>123 (3.98)</td>
<td>1.55 (0.75)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.79 (1.42)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.02 (1.31)</td>
</tr>
<tr>
<td>6.00 and above</td>
<td>97 (1.84)</td>
<td>1.69 (0.74)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.20 (1.05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.48 (1.45)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>n (%)</th>
<th>Mathematics Category</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.49 or less (0.74)</td>
</tr>
<tr>
<td>Male</td>
<td>2850 (54.17)</td>
<td>1.43 (0.80)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.79 (1.17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.70 (1.13)</td>
</tr>
<tr>
<td>Female</td>
<td>2407 (45.83)</td>
<td>1.24 (0.67)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.43 (1.26)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.42 (0.95)</td>
</tr>
</tbody>
</table>

Once again, we rearranged this figure so that the person distribution appeared on the vertical axis and the items were listed separately according to their location. Figure 8 shows what these high-achieving Mathematics students know and can do. For example, students in the higher Mathematics category are able to complete items such as 4+11 (coded Sb345), 15–4 (coded Sb348), and 6 less than 15 (coded M332). Those in the lower of the high-achieving Mathematics groups are, on average, able to complete items such as 3 more than 8 (coded M331) and continuing the sequence 10, 20, 30, 40 … (coded Sb342).

We proceeded with our analysis by examining the profile of the 5,261 high-performing Mathematics students. Table 4 presents the mean person locations for each of the two high Mathematics categories according to the factors of Age of Starting School and Gender.

First, when we examined the school-starting Age group, we found a significant difference across age groups with means increasing with Age, except for the youngest age group where the mean was similar to that of children aged 5.25 years (F= 5.91 (8, 1), p < 0.001). Except for this youngest group, these results are as expected, since we already know that age and performance are strongly correlated, especially in the early years of schooling (Wildy & Styles, 2008a; Wildy & Styles, 2008b). There was no significant interaction between Age group and Maths category.
Second, we found a significant mean Gender difference, with males performing better than females (F = 53.73, (1,1), p < 0.001). Males’ locations were also more variable than females’ locations and there was no category by Gender interaction. We were not surprised at these findings as similar results were noted in previous analyses (Wildy & Styles, 2008a; Wildy & Styles, 2008b).

**Reading and Mathematics**

We were interested to know whether the high-achieving Reading students were also high-achieving Mathematics students. Table 5 shows the numbers of students who scored high on both Reading and Mathematics. We found that nearly half of the students (44.32%) who scored high on Reading also scored high on Mathematics. Of the 4030 high Reading students, 9.21% (371) scored in the highest Mathematics category. Furthermore, 3.82% (154) of all students in this sample were in both the highest Reading category (5) and the highest Mathematics category (2).

<table>
<thead>
<tr>
<th>Mathematics Category</th>
<th>n (Reading category)</th>
<th>1</th>
<th>2</th>
<th>Total (Mathematics Categories)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Category 1</td>
<td>1284</td>
<td>366</td>
<td>30</td>
<td>396</td>
</tr>
<tr>
<td>2</td>
<td>894</td>
<td>308</td>
<td>40</td>
<td>348</td>
</tr>
<tr>
<td>3</td>
<td>720</td>
<td>281</td>
<td>74</td>
<td>355</td>
</tr>
<tr>
<td>4</td>
<td>592</td>
<td>239</td>
<td>73</td>
<td>312</td>
</tr>
<tr>
<td>5</td>
<td>540</td>
<td>221</td>
<td>154</td>
<td>375</td>
</tr>
<tr>
<td>Total</td>
<td>4030</td>
<td>1415</td>
<td>371</td>
<td>1786 (44.32%)</td>
</tr>
</tbody>
</table>

In other words, we found that 154 students in our Western Australian data set (2002–2008) were able to answer correctly items such as the Reading items *Emma was ready to love/leaf/leave* … and *Yasir was wear/wearing/wore* … and the Mathematics items 4+1, 15–4, and 6 less than 15, at the start of the year prior to testing.

Table 6: Proportions of students (%) in high scorer Categories for Reading and Mathematics from 2002 to 2008.

<table>
<thead>
<tr>
<th>Year</th>
<th>Mathematics</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>8.7</td>
<td>8.0</td>
</tr>
<tr>
<td>2003</td>
<td>8.0</td>
<td>6.2</td>
</tr>
<tr>
<td>2004</td>
<td>8.8</td>
<td>6.0</td>
</tr>
<tr>
<td>2005</td>
<td>8.7</td>
<td>5.5</td>
</tr>
<tr>
<td>2006</td>
<td>8.3</td>
<td>5.9</td>
</tr>
<tr>
<td>2007</td>
<td>9.0</td>
<td>7.6</td>
</tr>
<tr>
<td>2008</td>
<td>10.0</td>
<td>8.4</td>
</tr>
</tbody>
</table>

Table 7: Mean person locations on Reading for each of six Categories by Year from 2002 to 2008 (std dev in brackets)

<table>
<thead>
<tr>
<th></th>
<th>n (%)</th>
<th>Reading category</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>3619</td>
<td>90.48</td>
<td>1 (0 score)</td>
<td>2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.52 (1.06)</td>
</tr>
<tr>
<td>92</td>
<td>2.30</td>
<td>2 (1 to 5)</td>
<td>2003</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.27 (0.96)</td>
</tr>
<tr>
<td>85</td>
<td>2.13</td>
<td>3 (6 to 10)</td>
<td>2004</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.54 (1.06)</td>
</tr>
<tr>
<td>62</td>
<td>1.55</td>
<td>4 (11 to 15)</td>
<td>2005</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.35 (1.00)</td>
</tr>
<tr>
<td>81</td>
<td>2.03</td>
<td>5 (16 to 20)</td>
<td>2006</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.40 (1.05)</td>
</tr>
<tr>
<td>61</td>
<td>1.53</td>
<td>6 (Stories plus WTS)</td>
<td>2007</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.44 (1.17)</td>
</tr>
<tr>
<td>3938</td>
<td>100</td>
<td></td>
<td>2008</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>−0.33 (1.15)</td>
</tr>
</tbody>
</table>
to Year 1. There were slightly more than 4000 students able to read at least simple sentences, and more than 5200 students able to read two-digit numbers and do simple calculations using two-digit numbers.

Change over time

Table 6 shows the proportions of students who were categorised in the highest score groups for Reading and Mathematics in each of the years from 2002 to 2008.

From these results, it is evident that the proportions for Reading dropped back from 2002 to 2005, but that the proportions for Reading have increased from 2005 to 2008, and for Mathematics from 2006 to 2008.

We now consider performance for students in general across the years 2002 to 2008, rather than only the highest-scoring students. In order to be able to extract and use person locations from the RUMM analyses for further analyses with standard statistical techniques, sub-samples of 500 students were selected randomly for each of the years 2002–2008, using the full sample of about 59,000 students, forming a total of about 4000 students in all.

Reading

Students were assigned to one of six categories on the basis of their total scores on the Stories and Walking to School, the most difficult of the Reading subscales. Table 7 shows the number of students in the six Reading categories and the mean locations for each category across each year level. As may be seen, these mean locations fluctuate across years.

Figure 9 shows the graph of mean person locations for all students on Reading by Year.

Mathematics

Students were assigned to one of four categories based on their total scores on Maths and SumsB—the two most difficult Mathematics sub-scales. Table 8 shows the mean locations of students in each of the four Mathematics categories across the period 2002 to 2008. There is no consistent pattern of performance across the years, for any of the four categories.

Figure 10 shows the graph of mean person locations for all students by Year. The mean locations increased

Table 8: Mean locations for students in each of four Mathematics categories across 2002 to 2008.

<table>
<thead>
<tr>
<th>n (%)</th>
<th>Maths Category</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>1460</td>
<td>1 (0 score)</td>
<td>–2.14</td>
<td>–1.97</td>
<td>–1.94</td>
<td>–2.09</td>
<td>–2.07</td>
<td>–2.03</td>
<td>–2.02</td>
</tr>
<tr>
<td>(36.50)</td>
<td></td>
<td>(1.18)</td>
<td>(1.31)</td>
<td>(1.36)</td>
<td>(1.32)</td>
<td>(1.29)</td>
<td>(1.28)</td>
<td>(1.41)</td>
</tr>
<tr>
<td>2148</td>
<td>2 (1 to 5)</td>
<td>–0.52</td>
<td>–0.46</td>
<td>–0.32</td>
<td>–0.37</td>
<td>–0.38</td>
<td>–0.37</td>
<td>–0.23</td>
</tr>
<tr>
<td>(53.70)</td>
<td></td>
<td>(0.93)</td>
<td>(0.83)</td>
<td>(0.86)</td>
<td>(0.82)</td>
<td>(0.77)</td>
<td>(0.81)</td>
<td>(0.86)</td>
</tr>
<tr>
<td>335</td>
<td>3 (6 to 10)</td>
<td>1.46</td>
<td>1.37</td>
<td>1.44</td>
<td>1.45</td>
<td>1.73</td>
<td>1.23</td>
<td>1.40</td>
</tr>
<tr>
<td>(8.38)</td>
<td></td>
<td>(0.96)</td>
<td>(0.77)</td>
<td>(0.87)</td>
<td>(0.82)</td>
<td>(1.05)</td>
<td>(0.89)</td>
<td>(0.93)</td>
</tr>
<tr>
<td>57</td>
<td>4 (11 to 20)</td>
<td>4.81</td>
<td>4.06</td>
<td>3.81</td>
<td>4.16</td>
<td>5.49</td>
<td>4.21</td>
<td>4.22</td>
</tr>
<tr>
<td>(1.43)</td>
<td></td>
<td>(1.86)</td>
<td>(0.75)</td>
<td>(0.48)</td>
<td>(1.09)</td>
<td>(3.64)</td>
<td>(0.95)</td>
<td>(0.95)</td>
</tr>
<tr>
<td>4000</td>
<td></td>
<td>–0.94</td>
<td>–0.89</td>
<td>–0.69</td>
<td>–0.83</td>
<td>–0.78</td>
<td>–0.80</td>
<td>–0.73</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(1.81)</td>
<td>(1.47)</td>
<td>(1.51)</td>
<td>(1.54)</td>
<td>(1.65)</td>
<td>(1.50)</td>
<td>(1.63)</td>
</tr>
</tbody>
</table>
from 2002 to 2004, dropped back in 2005, and then in subsequent years show small increases up to 2008. (Note that, because the units of scale for Reading and Mathematics may be different, the changes for the two measures are not directly comparable using this analysis.)

Figure 10: Mean person locations in Mathematics across 2002 to 2008.

Discussion

Of the full sample of 59,013 students, 6.80% and 8.92% performed at the level of the highest Reading and Mathematics Categories respectively. The question we pose, then, is whether teachers recognise and provide appropriate curricula for these groups of students. And, especially, do they cater for the highest scorers within these two groups? A sizeable group of students (44.32%) who are able readers are also able in mathematics. Almost 4% of the sample of the most able students (0.26% of the full sample of 59,013 students) are the most able in both Mathematics and Reading. What are teachers doing to support and engage these students? A comparative analysis of students’ performance on the PIPS and, three years later, on the WALNA (Year 3) suggests that many of the high-scoring students are performing at the level of students two or three years older than their age peers (Wildy & Styles, 2009). Anecdotal evidence suggests that, for a variety of reasons, many teachers are not perceived as providing adequate individualised learning tasks for these students. Further, teachers may often not be aware of these students’ levels of performance and understanding. Parents of high-performing students have particular concerns about the adequacy of provision for their children when beginning school, concerns which are different from those of other parents (Whitton, 2005) and which teachers need to be aware of and be prepared to discuss with parents.

The provision of specialised treatment for very able students has been a subject of interest and controversy for many decades. Opinions on how best to cater for such students have varied from acceleration to specialised schools and to individualising learning within the normal classroom. Interest in the issue has waxed and waned in intensity, with new research being done, and new policies being developed by education departments internationally every now and again. In Western Australia, the Education Department’s policy is to retain such students in their mainstream, peer-aged classes but to provide individualised curricula for them. This is in line with other current opinions (Porter, 1999; Senate Employment, Workplace Relations, Small Business and Education Reference Committee, 2001). It would be useful to establish whether teachers have identified such students in their classes and, if so, what they are doing to individualise the curricula for them. Such research may lead to changes in policy and practice which may support these students more adequately.

There are implications for classroom teachers, curriculum leaders, school principals, system personnel and those responsible for teacher preparation programs. The PIPS-BLA scales show each student’s performance scores, rather than teacher’s reports of student performance. Such data is independent of teachers’ previous knowledge and experience of students’ performance at this age and gives robust information to guide the preparation of programs targeted at each student’s performance level. We believe this quality of information helps teachers in all settings and contexts to make sound judgements about the programs that match students’ needs. Curriculum leaders, principals and system personnel also benefit from such robust information to guide them in providing appropriate professional development and support materials for classroom teachers. However, it is not always evident that all beginning, or indeed practising, teachers have experience in interpreting assessment data. Such assessment literacy is now a pressing requirement of all teachers in a context of heightened national assessment. Therefore we urge those responsible for teacher preparation programs to focus on not only the implementation of assessments like PIPS-BLA but also the interpretation of data generated by such assessment tools.

The results pertaining to change in performance on the PIPS-BLA over time were examined across seven years. It is likely that longer periods are needed in order to establish whether the extent of changes that have been reported in at least one measure of general intelligence (Flynn, 1984) over time are also evident in measures of school readiness such as PIPS-BLA. Based on findings to date, there is a general trend of increasing performance in Mathematics from 2002 to 2008, and evidence that mean scores in Reading have increased from 2006 to 2008. The proportions of very able students have increased in both Reading and Mathematics over the same period. Thus the anecdotal evidence from teachers is supported. Data from future
years will be tracked to establish whether these mean scores and the proportions of high-scoring students continue to increase.

References


Introduction

Child sexual abuse (CSA) is a significant social problem with far-reaching implications for child victims, their families and communities. In Australia each year approximately 3500 children are found to have been sexually abused after investigation by state and territory-based child protection authorities (Australian Institute of Health and Welfare, 2010). Risk factors for CSA include: gender—girls are more likely to be sexually abused (Finkelhor, 1993; Australian Institute of Health and Welfare, 2010); age—the time of greatest vulnerability for child sexual abuse victimisation has been identified as between seven and 12 years of age (Finkelhor & Baron, 1986; Fleming, 1997; Nelson et al., 2002; Trickett, Horowitz, Reiffman & Putnam, 1997); disability—children with sensory impairments are at greater risk (Westcott & Jones, 1999); family characteristics—parental mental health problems, parental substance abuse, extended maternal absences, presence of non-paternal males in the home, domestic violence, social isolation and punitive parenting. These factors have been associated with increased risk in a variety of studies (see Putnam, 2003) and, in Australia, Indigenous status—Indigenous children are over-represented in investigated child sexual abuse matters (Australian Institute of Health and Welfare, 2010; Northern Territory Government, 2007).

Considerable negative effects can result from sexual abuse in childhood, including emotional distress and disturbance, symptoms of post-traumatic stress disorder, behavioural problems, interpersonal difficulties, and problems with cognitive functioning which may lead to school failure or abandonment of education altogether (see Berliner & Elliott, 2002; Jones, Trudinger & Crawford, 2004). Later in life, CSA constitutes a significant risk factor for serious health and mental health problems. However, negative outcomes are not inevitable and appear to be related to several factors, including the extent and nature of the abuse, age at onset, the relationship of the perpetrator to the victim, family functioning in general, coping styles, and the degree of support provided by family and other caregivers (see Berliner & Elliot, 2002; Putnam, 2003).

THIS PAPER PRESENTS THE results of a systematic review of literature on the topic of parents’ views about child sexual abuse prevention education. It describes: i) what parents know about child sexual abuse prevention education; ii) what child sexual abuse prevention messages parents provide to their children and what topics they discuss; iii) what parents’ attitudes are towards child sexual abuse prevention education in schools; and iv) their preferences for content. Electronic database searches were conducted to identify relevant literature published in English relating to child sexual abuse prevention programs and parents’ views. A total of 429 papers was evaluated, with 13 studies identified as meeting the study’s inclusion criteria.

Worldwide, empirical research on parents’ views about child sexual abuse prevention programs is limited and more research is needed in Australia. Implications for future research and practice are outlined.

Parents’ views about child sexual abuse prevention education:
A systematic review

Robyn Hunt
Kerryann Walsh
Queensland University of Technology

THIS PAPER PRESENTS THE results of a systematic review of literature on the topic of parents’ views about child sexual abuse prevention education. It describes: i) what parents know about child sexual abuse prevention education; ii) what child sexual abuse prevention messages parents provide to their children and what topics they discuss; iii) what parents’ attitudes are towards child sexual abuse prevention education in schools; and iv) their preferences for content. Electronic database searches were conducted to identify relevant literature published in English relating to child sexual abuse prevention programs and parents’ views. A total of 429 papers was evaluated, with 13 studies identified as meeting the study’s inclusion criteria.

Worldwide, empirical research on parents’ views about child sexual abuse prevention programs is limited and more research is needed in Australia. Implications for future research and practice are outlined.

1 Child sexual abuse is a term used to describe sexual activity between a child and an adult or older child. The experience of child sexual abuse can include physical contact such as unwanted touching, fondling, frottage, masturbation, oral-genital contact, digital penetration, and vaginal and anal intercourse. As well, children may experience sexual abuse without actual physical contact, such as being the subject of sexual comments, voyeurism, exposure, and the showing of pornography (Finkelhor, 2008; Putnam, 2003). Common to child sexual abuse is breach of trust, coercion, exploitation and/or adult use of the child for gratification (Kinnear, 2007; World Health Organization, 2006). Child sexual abuse is a crime in every Australian state and territory, and in New Zealand.
Prevention of child sexual abuse and exploitation is a key goal of the National Framework for Protecting Australia’s Children (COAG, 2009), a policy initiative which aims for a substantial and sustained reduction in child abuse and neglect in Australia by 2020. According to Wurtele (2009), one of the foremost international researchers in the area of child sexual abuse prevention, strengthening and sustaining human capacity to prevent child sexual abuse can be conceptualised as a process of reducing risk factors and building protective factors in potential perpetrators and victims, their families and communities. A comprehensive prevention approach would target all people—children and youth, parents, professionals, and the public—in an array of settings including schools and early childhood centres, homes and communities.

Research has established that parents are the most frequent sources of information for children about CSA (Hazzard, Webb, Kleemeier, Angert & Pohl, 1991) and parent engagement is crucial to the success of child-focused prevention programs (Finkelhor & Dziuba-Leatherman, 1995; Macintyre & Carr, 1999). Given their critical role, the purpose of this review is to assemble and describe current knowledge on the topic of parents’ views about child sexual abuse prevention education (CSAPE). Synthesising what is already known about parents’ views is important because it offers insights into the factors and processes influencing their decisions regarding CSAPE and this can provide a reference point for future research and practice.

This paper presents the results of a systematic review of literature focusing on four key research questions: i) what do parents know about child sexual abuse prevention education?; ii) what child sexual abuse prevention messages do parents provide to their children?; iii) what are parents’ attitudes towards child sexual abuse prevention education in schools/centres?; and iv) what are parents’ preferences for content in child sexual abuse prevention programs located in schools/centres? Answers to these questions are considered crucial for future school and centre-based prevention efforts focusing on children and their parents.

Method

We used Evans and Benefield’s (2001) guide for the conduct of systematic reviews in educational research. Their approach was developed to meet the demand for rigorous reviews of existing evidence that could be used in the push towards evidence-based policy and practice. Key features of systematic reviews are: fine detailing of the research question(s); transparency in the reporting of search methods; comprehensive searches for published and unpublished studies; clear criteria for assessing the quality of studies; clear inclusion and exclusion criteria; more than one reviewer to reduce selection bias; and clear reporting of the findings (Evans & Benefield, 2001).

Electronic database searches were conducted to identify relevant literature published in English relating to parents’ views about child sexual abuse prevention education which was nominated as the field of study. The databases searched were: Academic Research Library; Academic Search Elite; A+ Education; JSTOR; InformaWorld; ProQuest; PsychInfo; and ScienceDirect. The time frame for articles was left open in order to capture as much information as possible in relation to the topic. The search terms child abuse, and child sexual abuse, were used in combination with the terms parent, attitude*, view*, perspective*, prevention program*, sexual abuse prevention program* and school prevention program*. The same search strategies were used for each database. Searches were conducted twice with a two-month interval.

The number of papers identified in the searches was 429, and they were screened by the first author by scanning the title and skim-reading abstracts. Abstracts deemed relevant in this process were read more thoroughly. Studies were eligible for inclusion in the review if they were: i) primary research articles, ii) published in a peer-reviewed journal, book chapter or report, iii) reporting on the views of parents with young children aged 0–12 years; and iv) focused on one of the four key research questions. Papers were excluded from the review if they were about parent views of child sexual abuse broadly, or examined child sexual abuse prevention programs but without attention to parent views. To be included, papers had to address parent views about child sexual abuse prevention education. Thirteen (13) papers satisfied these criteria.

Because this process yielded a relatively small number of relevant papers, a supplementary hand-search was conducted in consultation with reference lists of relevant studies. The hand-search also included key journals in the field (Child Abuse Review; Child Abuse & Neglect; Child Maltreatment; Journal of Child Sexual Abuse; and Journal of Interpersonal Violence). The literature search concluded with an internet-based hand-search for ‘grey literature’ (Evans & Benefield, 2001, p. 535) such

2 A ‘comprehensive prevention approach’ is a term used in public health parlance to refer to interventions designed to address the full scope of a problem: A comprehensive approach to CSA prevention involves prevention at three levels: i) primary prevention is directed towards the whole population designed to stop CSA from occurring in the first place; ii) secondary prevention is directed towards groups at greater risk for CSA; and is designed to stop occurrences in that high-risk group; and iii) tertiary prevention is directed towards individuals who have experienced or perpetrated CSA, and are designed to stop further occurrences of CSA when it has already occurred (Daro, 1994).

3 In this paper the term parent(s) is used to connote parents and/or caregivers inclusive of foster and kinship carers.
as technical/research reports, or discussion papers not available via searchable databases. Authoritative sources for grey literature were identified as: the National Child Protection Clearinghouse; Australian Centre for the Study of Sexual Assault; Family Planning Queensland; The National Centre on Child Abuse and Neglect; Child Welfare Information Gateway; and Stop It Now! Undergraduate and postgraduate theses were not included.

The second wave of database searches turned up a recent comprehensive narrative review on the topic of parents’ knowledge, attitudes and practices about preventing child sexual abuse (Babatsikos, 2010). Although covering much broader subject matter than the research reported here, it provided an audit on the papers uncovered in our searches. The reference list from this article was hand-searched, yielding no further papers meeting the inclusion criteria.

Finally, a consensus meeting was held where these papers were evaluated independently by both authors to arrive at final decisions on inclusion and assignment of articles to groups representing the four research questions. A total of 13 papers was included in the final review. Table 1 presents these 13 papers and a breakdown of their content relative to each of the four research questions (RQs).

### Results

Research with parents of preschool or primary (elementary) school-aged children had been conducted in Australia, Canada, China, Hong Kong and the United States of America (USA). Participants in the studies were predominantly female, ranging in proportion from 50.5 per cent (Elrod & Rubin, 1993) to 94.8 per cent of samples (Deblinger, Thakkar-Kolar, Berry & Shroeder, 2010). All studies utilised convenience sampling. Papers fell into two categories: studies asking parents directly about their views or perceptions via surveys (pen and paper, or face-to-face interviews), and experimental or quasi-experimental studies testing the effectiveness of interventions where parents completed survey instruments as part of pre-test and/or post-test evaluations. For many of the papers, contents contributed to answering more than one research question even though this may not have been the original intent of the research.

Table 1: Papers meeting criteria for inclusion, by research question

<table>
<thead>
<tr>
<th>Author(s) &amp; date</th>
<th>Country</th>
<th>Method</th>
<th>Sample type, size, gender</th>
<th>Parent details</th>
<th>Findings in relation to RQs</th>
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<tbody>
<tr>
<td>Parents’ knowledge about CSA prevention education</td>
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<tr>
<td>Chen &amp; Chen (2005)</td>
<td>China (Fuxin City, Liaoning Province)</td>
<td>Cross-sectional survey</td>
<td>Convenience (n = 447) Female 70.1%</td>
<td>Parents of primary-school children</td>
<td>7.9% of parents talked with them about CSA prevention. 6.8% of parents had themselves received CSAPE at school Most agreed CSAPE was necessary and acknowledged children could not learn the material independently.</td>
</tr>
<tr>
<td>Chen, Dunne &amp; Han (2007)</td>
<td>China (Jingzhou City, Hubei province)</td>
<td>Cross-sectional survey</td>
<td>Convenience (n = 652) Female 60.7%</td>
<td>Parents of Grade 3 children aged 7–8 years</td>
<td>Most parents agreed CSAPE was necessary.</td>
</tr>
<tr>
<td>Deblinger, Thakkar-Kolar, Berry &amp; Shroeder (2010)**</td>
<td>USA (Southern New Jersey)</td>
<td>Cross-sectional survey based on Wurtele et al. (1992)</td>
<td>Convenience (n = 289) Female 94.8%</td>
<td>Parents of children in kindergarten to third grade</td>
<td>Parents who were more likely to educate their children about CSA were those with a personal history of CSA and those who knew someone who had experienced CSA.</td>
</tr>
<tr>
<td>Elrod &amp; Rubin (1993)</td>
<td>USA (Montgomery County, Maryland)</td>
<td>Structured telephone interviews</td>
<td>Convenience (n = 101) Female 50.5%</td>
<td>Parents of children aged &lt;7 years</td>
<td>99% of parents obtained information about CSA from the media. Approximately one-quarter accessed information via doctors’ offices; friends; spouses; parent education programs.</td>
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<tr>
<td>Author(s) &amp; date</td>
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<tr>
<td>Tang &amp; Yan (2004)</td>
<td>Hong Kong</td>
<td>Face-to-face structured interviews</td>
<td>Convenience ($n = 1606$) Female 69%</td>
<td>Adults responding as parents of a child aged ≤17 years</td>
<td>Adults indicating a firm intention to attend CSAPE were more likely to be female, have greater concerns about CSA, consider CSA as more prevalent and believe CSA involves physical injuries of children.</td>
</tr>
<tr>
<td>Tutty (1993)**</td>
<td>Canada (Southern Ontario)</td>
<td>Cross-sectional survey (Parental Knowledge Questionnaire)</td>
<td>Convenience ($n = 284$)</td>
<td>Parents of elementary-school-aged children</td>
<td>The more parents themselves knew about CSA and its prevention, the more accurately they predicted their child's knowledge.</td>
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<tr>
<td>Wurtele, Kvaternick &amp; Franklin (1992)**</td>
<td>USA (Colorado)</td>
<td>Cross-sectional survey</td>
<td>Convenience ($n = 375$) Female 77.6%</td>
<td>Parents of 3–5-year-old children</td>
<td>Only 6.4% of children had participated in a CSAPE program. Parents who discussed CSA with their children had known someone who had been sexually abused, been abused themselves, or knew a perpetrator.</td>
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<td>Briggs (1988)</td>
<td>Australia (Adelaide)</td>
<td>Face-to-face structured interviews with parents recruited in a community setting</td>
<td>Convenience ($n = 250$) Female &gt;80%</td>
<td>Parents of children aged 3–12 years</td>
<td>25% had discussed CSA prevention. 98% would wait until the child initiated. Messages often indirect (hints). Stranger danger message common. Only one parent had discussed touching in private places and reporting this to an adult.</td>
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<tr>
<td>Chen &amp; Chen (2005)</td>
<td>China (Fuxin City)</td>
<td>Cross-sectional survey</td>
<td>Convenience ($n = 447$) Female 70.1%</td>
<td>Parents of primary-school children</td>
<td>&gt;95% had discussed stranger danger. Fewer (&gt;50%) had talked about private parts, touching, resisting, and telling a trusted adult. Discussions more common with daughters than sons. A small minority had used books or audiovisual resources.</td>
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<td>Chen, Dunne &amp; Han (2007)</td>
<td>China (Jingzhou City)</td>
<td>Cross-sectional survey</td>
<td>Convenience ($n = 447$) Female 60.7%</td>
<td>Parents of Grade 3 children aged 7–8 years</td>
<td>&gt;95% had discussed stranger danger. Fewer (~50–70%) had talked about private parts, touching, resisting, and telling a trusted adult. Discussions more common with daughters than sons. Most did not have access to print or audiovisual resources.</td>
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<tr>
<td>Author(s) &amp; date</td>
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<tr>
<td>Deblinger, Thakkar-Kolar, Berry &amp; Shroeder (2010)**</td>
<td>USA (New Jersey)</td>
<td>Cross-sectional survey based on Wurtele et al. (1992)</td>
<td>Convenience (n = 289) Female 94.8%</td>
<td>Parents of children in kindergarten to third grade</td>
<td>78.9% had discussed CSA with children. Most had discussed strangers as perpetrators (93%) but fewer included known adults (64.5%), relatives (43%), parents (26.3%) or siblings (24.6%). Most taught to tell a parent (93%), get away (83.8%), say ‘no’ (74.1%), fight back (64.5%). Fewer told to tell more than one person (47.4%).</td>
</tr>
<tr>
<td>Hébert, Lavoie, Piché &amp; Poitras (2001)**</td>
<td>Canada (Quebec City)</td>
<td>Quasi-experimental study of children with pre-/post test. Cross-sectional post-test survey of parents</td>
<td>Convenience (n = 94 parents) Female 84%</td>
<td>Parents of children in 1st and 3rd grade</td>
<td>After their children attended CSAP: fewer negative effects for children who had discussed the program with their parents; children better articulated likes and dislikes; showed greater self-confidence; dealt better with conflict; were more assertive and autonomous.</td>
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<tr>
<td>Pohl &amp; Hazzard (1990)**</td>
<td>USA (not specified)</td>
<td>Quasi-experimental study of children with pre-/post test. Cross-sectional post-test survey of parents survey</td>
<td>Convenience (n = 242) Female not stated</td>
<td>Parents of fourth grade children</td>
<td>74% had discussed personal safety with their child prior to them attending a CSAPE program.</td>
</tr>
<tr>
<td>Tutty (1993)**</td>
<td>Canada (Southern Ontario)</td>
<td>Cross-sectional survey (Parental Knowledge Questionnaire)</td>
<td>Convenience (n = 284)</td>
<td>Parents of elementary-school-aged children</td>
<td>25% had provided CSAPE materials to their children at home (books, colouring books, videos). Children who received this information displayed higher levels of knowledge prior to entering a program at school. 62% had spoken about CSA with children after they attended the program.</td>
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<tr>
<td>Author(s) &amp; date</td>
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<td>Wurtele, Kvaternick &amp; Franklin (1992)**</td>
<td>USA (Colorado)</td>
<td>Cross-sectional survey</td>
<td>Convenience ((n = 375)) Female 77.6%</td>
<td>Parents of 3–5-year-old children</td>
<td>59.1% had discussed CSA with children. 17.6% had used books or games. Most had discussed strangers as perpetrators (90.1%) but fewer included known adults (61%), relatives (35%), parents (21.5%) or siblings (18.8%). Most taught to tell a parent (84.7%), get away (77.1%), say ‘no’ (76.2%), fight back (51.1%).Fewer told to tell more than one person (32.4%)</td>
</tr>
<tr>
<td>Briggs (1988)</td>
<td>Australia</td>
<td>Face-to-face structured interviews with parents recruited in a community setting</td>
<td>Convenience ((n = 250)) Female &gt; 80%</td>
<td>Parents of children aged 3–12 years</td>
<td>100% supported the introduction of CSAPE in schools and preschools. Fathers considered it the mother’s role. Reasons given for not discussing: child is too young to understand; don’t know how to talk about it; don’t want to frighten child; did not think it was necessary.</td>
</tr>
<tr>
<td>Burgess &amp; Wurtele (1998)</td>
<td>USA (Colorado)</td>
<td>Quasi experimental, self-report pre-/post-test questionnaire</td>
<td>Convenience with random assignment to treatment &amp; control groups ((n = 45)) Female 77%</td>
<td>Parents of children aged 2–6 years</td>
<td>Parents who attended a CSA workshop had greater intentions to talk with children about CSA than parents who had not attended. Parents who attended also reported discussing recommended topics.</td>
</tr>
<tr>
<td>Campis, Prentice-Dunn &amp; Lyman (1989)**</td>
<td>Not indicated</td>
<td>Experimental study with 5 groups and 2 conditions. Self-report post-test only</td>
<td>Convenience with random assignment ((n = 165)) Female 100%</td>
<td>Parents of elementary-school-aged children</td>
<td>Providing parents with coping information increased willingness to inform children about CSA. Attitudes changed by providing information to parents about the effectiveness of CSAPE and reinforcing their ability to deliver prevention messages.</td>
</tr>
<tr>
<td>Chen &amp; Chen (2005)</td>
<td>China (Fuxin City)</td>
<td>Cross-sectional survey</td>
<td>Convenience ((n = 447)) Female 70.1%</td>
<td>Parents of primary-school children</td>
<td>&gt;89.8% of parents supported school-based CSAPE.</td>
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<tr>
<td>Author(s) &amp; date</td>
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<tr>
<td>Chen, Dunne &amp; Han (2007)</td>
<td>China (Jingzhou City)</td>
<td>Cross-sectional survey</td>
<td>Convenience Female 60.7%</td>
<td>Parents of Grade 3 children aged 7–8 years</td>
<td>97.7% of parents agreed that CSAPE should be taught in schools. Few parents (7.5%) viewed CSAPE as unnecessary because the problem was rare. 46.8% were worried that CSAPE may result in too much knowledge about sex.</td>
</tr>
<tr>
<td>Deblinger, Thakkar-Kolar, Berry &amp; Schroeder (2010)**</td>
<td>USA (Southern New Jersey)</td>
<td>Cross-sectional survey based on Wurtele et al. (1992)</td>
<td>Convenience (n = 289) Female 94.8%</td>
<td>Parents of children in kindergarten to third grade</td>
<td>Reasons given for not discussing: child too young to understand; didn’t occur to me; don’t know how to explain</td>
</tr>
<tr>
<td>Elrod &amp; Rubin (1993)</td>
<td>USA (Montgomery County, Maryland)</td>
<td>Structured telephone interviews</td>
<td>Convenience (n = 101) Female 50.5%</td>
<td>Parents of children aged &lt;7 years</td>
<td>78% approved of CSAPE in schools.</td>
</tr>
<tr>
<td>Pohl &amp; Hazzard (1990)**</td>
<td>USA</td>
<td>Quasi-experimental study of children with pre-/post-test. Cross-sectional post-test survey of parents survey</td>
<td>Convenience (n = 242) Female not stated</td>
<td>Parents of fourth grade children</td>
<td>95% would allow their children to participate in a similar program in future. After the program, more parents discussed issues of personal safety with their children.</td>
</tr>
<tr>
<td>Wurtele, Kvaternick &amp; Franklin (1992)**</td>
<td>USA (Colorado)</td>
<td>Cross-sectional survey</td>
<td>Convenience (n = 375) Female 77.6%</td>
<td>Parents of 3–5 year-old children</td>
<td>72.5% believed that preschools and day care centres should teach CSAPE. 94.1% believed CSAPE should be taught at home and school. 84% would allow their child to participate in a CSAPE program. Reasons given for not discussing: it had not occurred to me; child too young to understand.</td>
</tr>
<tr>
<td>Author(s) &amp; date</td>
<td>Country</td>
<td>Method</td>
<td>Sample type, size, gender</td>
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<tr>
<td>Elrod &amp; Rubin (1993)</td>
<td>USA (Montgomery County, Maryland)</td>
<td>Structured telephone interviews</td>
<td>Convenience (n = 101) Female 50.5%</td>
<td>Parents of children aged &lt;7 years</td>
<td>A wide range of topics: good/bad touches; how to tell; who to tell; importance of telling; child is not to blame; who abusers are; how to protect yourself; why abuse happens; what happens when you tell; what a child can do to help someone else; likelihood of abuse happening. Gender differences in what was considered acceptable by men and women. More than 90% rated themselves or their spouses as preferred educators about CSA. 50% considered teachers and doctors as next best. 50% thought police might frighten children.</td>
</tr>
<tr>
<td>El-Shaieb &amp; Wurtele (2009)</td>
<td>USA</td>
<td>Cross-sectional survey</td>
<td>Convenience (n = 214) Female 77%</td>
<td>Parents of young children (mean age of 6.75 years)</td>
<td>Gender differences in age CSAPE considered appropriate to begin: mothers 6.85 years and fathers 10.75 years.</td>
</tr>
<tr>
<td>Wurtele, Kvaternick &amp; Franklin (1992)**</td>
<td>USA (Colorado)</td>
<td>Cross-sectional survey</td>
<td>Convenience (n = 375) Female 77.6%</td>
<td>Parents of 3–5 year-old children</td>
<td>Parents believed it was appropriate for children to be taught CSAPE from a mean age of 3.4 years. Strong agreement that children should be taught: to say no; report abuse; not keep abuse a secret; that they have a right not to be touched in uncomfortable ways; CSA is never a child’s fault.</td>
</tr>
</tbody>
</table>

Table notes: CSAPE = child sexual abuse prevention education; In studies marked ** Children were the focus of this study and parents completed a questionnaire as part of the study.

**What do parents know about child sexual abuse prevention education?**

Research about parents’ knowledge of child sexual abuse prevention education is scant; therefore the review parameters for inclusion under this research question were drawn broadly. For example, articles reporting on general awareness, sources of information, and factors associated with intentions to seek CSAPE were included here to provide insights into the broad dimensions of parental knowledge and its effects. Information was drawn from seven papers as listed in Table 1.

Although most parents agreed that the teaching of CSAPE was necessary and that children would not learn CSA prevention concepts independently (Chen & Chen, 2005; Chen, Dunne & Han, 2007), very few parents had experienced CSAPE themselves: a mere 6.8 per cent of parents in Chen and Chen’s (2005) study of 447 parents in China reported experienced CSAPE in school. In the absence of formal education for parents, sources of information about CSA and its prevention were nominated as the media, pamphlets obtained in doctors’ offices, friends and spouses (Elrod & Rubin, 1993). Parents who reported a firm intention to seek out CSAPE in future were more likely to be female, have greater concerns about CSA, consider CSA as more prevalent, and believe CSA involves physical injury to children (Tang & Yan, 2004). Parents who indicated willingness to talk with or educate their children about CSA prevention were more likely to have known someone who had been sexually abused, had
a personal history of CSA, or had known a perpetrator (Deblinger et al., 2010; Wurtele, Kvaternick & Franklin, 1992). Importantly, the more parents themselves knew about CSA and its prevention the more accurately they were able to predict their child’s knowledge of the same (Tutty, 1993).

What child sexual abuse prevention messages do parents provide to their children?

Research about the CSA prevention messages parents provided and the contents of those messages was drawn from eight papers as listed in Table 1. This body of research considers the prevalence and specific contents of parental discussions with children. Overall, 25–79 per cent of parents had, at some time, discussed CSA and/or CSAPE with their young children. In the countries that have been studied longitudinally, there was a trend towards greater prevalence of discussions and greater detail in the contents of parent–child discussions over time. Prevalence and content varied from country to country. An early study conducted in the 1980s, only 25 per cent of Briggs (1988) Australian sample, comprising 250 parents, had ever discussed CSA prevention with their children and less than 1 per cent had discussed touching in private places and the need to report this to an adult. No follow-up studies have been conducted with Australian parents. In two Chinese benchmark studies, researchers found that exactly 50 per cent of the more than 1000 parents in these studies had discussed touching of private parts and telling a trusted adult (Chen & Chen, 2005; Chen et al., 2007). In a US study conducted almost two decades ago with 375 parents, researchers found that 59.1 per cent had discussed CSA with their children (Wurtele et al., 1992) and in a follow-up replication study with 289 parents, discussion had increased to 78.9 per cent (Deblinger et al., 2010). In two program evaluation studies, Pohl and Hazzard (1990) with 242 parents in the US, and Hébert, Lavoie, Piché and Poitras (2000) with 94 parents in Canada found that 74 per cent and 55 per cent, respectively, of parents who agreed for their children to participate in a school-based CSAPE program had discussed CSA prevention before the program began.

In their discussions, a greater proportion of parents had covered issues relating to stranger danger than had provided children with explicit details (Chen & Chen, 2005; Chen et al., 2007; Deblinger et al., 2010; Wurtele et al., 1992). More than 95 per cent of parents in the two Chinese studies (Chen & Chen, 2005; Chen et al., 2007), 90 per cent of parents in Wurtele and colleagues’ (1992) USA study and more than 80 per cent of those in Deblinger and colleagues’ follow-up study had discussed interactions with strangers. In Australia, Briggs (1988) revealed that parents mostly provided indirect warnings and believed they were protecting their children by limiting children’s contact with people outside their extended family and by shepherding them to and from activities. Fewer parents had taught children the correct terms for genitals—61 per cent of parents in Wurtele and colleagues’ (1992) study and 62.7 per cent in Deblinger and colleagues’ (2010) study. Also, fewer parents had taught children that their genitals should not be touched by others—59 per cent in Chen & Ch’en’s (2005) study and 66.5 per cent in Chen et al.’s (2007) study.

Studies elucidating parents’ coverage of specific acts that would constitute CSA and their provision of information regarding identities of potential perpetrators have been conducted only in the USA by Wurtele and colleagues (1992) and Deblinger and colleagues (2010). These studies showed that a substantial proportion of participating parents had discussed someone touching a child’s genitals (89.2/91.1%), but far fewer had discussed scenarios such as someone having the child touch their genitals (40.8/46.1%), someone showing their genitals to a child for sexual purposes (36.7/42.5%), or someone showing pornography to a child and/or involving a child in making pornography (11.3/22.4%). With regard to informing children about potential perpetrators, parents focused primarily on strangers, with fewer focusing on known adults (61/64.5%), relatives (35/43%), parents (21.5/26.3%), or siblings (18.8/24.6%). Across several studies, the parents reported teaching the strategy broadly referred to as ‘no/go/tell’ (say no and resist an assault; get away; tell a trusted adult); for example, approximately 75 per cent of parents in Wurtele and colleagues (1992) and Deblinger and colleagues (2010). However, less than half instructed their child to tell more than one person (Deblinger et al., 2010).

Parents’ use of and access to CSAPE resources has also been studied. In Wurtele and colleagues’ (1992) USA study, 17.6 per cent of parents reported using books or games with their children, but in Chen and Chen’s (2005) Chinese study only 4.2 per cent of parents reported using books or audiovisual materials with their children. Chen and colleagues’ (2007) study found a similarly low 4.5 per cent had provided information via these sources. In Tutty’s (1993) Canadian program evaluation study, approximately 25 per cent of parents who agreed for their children to attend a school-based CSAPE program had already provided children with information about CSA via resources such as books, colouring books, videos, television programs, and games, with the majority of these parents providing information via more than one source. Not surprisingly, children who received information via these sources displayed higher levels of baseline knowledge.

Child characteristics appear to affect whether or not messages will be delivered at all, although this has

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4 Two percentages in parentheses refer to results in i) Wurtele et al. (1992) and ii) Deblinger et al. (2010) respectively.
been studied only in China: Chinese parents admitted they were more likely to provide CSA prevention messages to their daughters than to their sons (Chen & Chen, 2005; Chen et al., 2007). Parental characteristics such as social class, age, and education level appear not to influence the likelihood of parents discussing CSA prevention with their children (Briggs, 1988; Chen et al., 2007; Elrod & Rubin, 1993). However, Elrod and Rubin’s (1993) USA study found that, in future, mothers intended to discuss a broader range of topics with their children than did fathers. Other research has established that parent–child discussion is associated with the success of school-based programs (Finkelhor & Dziuba-Leatherman, 1995; Maclntyre & Carr, 1999). Hérbert and colleagues (2001), who studied the effects of a school-based CSAPE program, found fewer negative effects for children who had discussed the program with their parents.

**What are parents’ attitudes towards child sexual abuse prevention education in schools/centres?**

According to attitude theories (for example Ajzen, 2005; Ajzen & Fishbein, 2005), attitudes towards an object or action are determined by individuals’ expectations or beliefs concerning the attributes of that object or action, and their evaluations of those attributes. In this review the object/action is CSAPE. Literature on parent attitudes towards CSAPE falls into two groups: parents’ attitudes towards provision of CSAPE in schools/centres, and their attitudes towards their own adoption of CSAPE with their children. Research findings on this topic are drawn from nine papers as listed in Table 1.

There is general acceptance of and agreement with the idea that CSA prevention programs should be taught in schools. This finding is strongly positive across a range of parent samples in different countries and over time. In Australia, Briggs (1988) found unanimous (100%) support for the introduction of CSAPE. In the USA Wurtele and colleagues (1992) found 94.1 per cent of parents believed CSAPE should be taught both at home and at school, with 72.5 per cent considering preschools and day care centres as appropriate venues for delivery, and Elrod and Rubin (1993) found 78 per cent of parents approved of CSAPE in schools. In China, Chen & Chen (2005) found 89.9 per cent of parents supported school-based CSAPE, and Chen and colleagues (2007) found an even higher 97.7 per cent approved. After experiencing a CSAPE program, 95 per cent of parents in Pohl and Hazzard’s (1990) USA evaluation study would allow their child to participate in an analogous program in future because they believed it would lead to CSA prevention.

In terms of their attitudes towards their own adoption of CSA prevention education with their children, gender differences were reported in Briggs’ (1988) Australian study, with fathers considering it the mother’s role regardless of child age or gender. Findings noted that Chinese fathers demonstrated more positive attitudes toward CSAPE being conducted in schools than did Chinese mothers (Chen & Chen, 2005). Differences in attitudes were also found based on parent education level, with higher levels of education associated with more positive attitudes towards CSAPE (Chen et al., 2007). Attitudes towards CSAPE do not appear to be related to child gender (Chen & Chen, 2005; Chen et al., 2007).

Regarding the specific attributes of CSA prevention which contribute to the formation of attitudes towards CSAPE, indicators can be found in the reasons given by parents for not discussing CSA prevention with their children. These reasons were manifold: because it did not occur to them (Deblinger et al, 2010; Wurtele et al., 1992); they believed their child was too young to understand (Briggs, 1988; Deblinger et al., 2010; Wurtele et al., 1992); they didn’t know how to talk about it (Briggs, 1988); or they thought it would frighten the child (Briggs, 1988). Although generally positive, a small minority of parents in some studies thought there was no need for such a program in schools because the problem was too rare and did not warrant universal education (Briggs, 1988; Chen & Chen, 2005), and almost half of one of the Chinese samples expressed concern that CSAPE may lead to their children becoming too knowledgeable about sex (Chen et al., 2007).

Actually experiencing a CSAPE program appears to change parent attitudes. After their children attended a school-based CSA prevention program, parents in a USA sample reported discussing issues of personal safety 2–3 times, creating a secondary effect in which the CSAPE curriculum was the catalyst for parent–child and child–parent communication (Pohl & Hazzard, 1990). Parents felt the program aided in creating a safe and easy way for families to discuss CSA prevention messages. Direct intervention with parents has also been shown to change their attitudes and thereby improve their willingness and ability to discuss CSA prevention with their children. In another USA study, Campis, Prentice-Dunn, and Lyman (1989) found that providing parents with information about the effectiveness of CSAPE and reinforcing their capacity to cope with the challenge of delivering CSA prevention messages significantly increased parents’ intentions to discuss CSA prevention with their children. In a further USA study, Burgess and Wurtele (1998) studied the effects of a CSAPE video for parents on parent–child communication about CSA. Parents who attended reported significantly stronger commitment to talk with their children about CSA than parents who had not attended, and at follow-up significantly more of those parents had actually discussed the recommended topics.
Finally, parents’ own experiences of receiving CSAPE appear to be strongly linked to their attitudes towards CSAPE. In Chen and Chen’s (2005) study, parents whose own parents had discussed CSA prevention held more positive attitudes towards school-based CSAPE. Positive attitudes translated into action whereby these parents demonstrated more active discussion with their own children.

**What are parents’ preferences for content in child sexual abuse prevention programs located in schools/centres?**

Parent preferences for content in school-based CSAPE have been researched in only a small handful of studies seeking to determine what parents consider appropriate and elucidating concerns they have with programs. Research findings on this topic are drawn from three USA papers as listed in Table 1.

Research from the USA has revealed inconsistencies in parental perceptions of the appropriate age for children to begin CSAPE. Parents in Wurtele and colleagues’ (1992) study suggested a mean age of 3.4 years was appropriate. However, parents in El Shaieb and Wurtele’s (2009) study responded differently according to gender: mothers considered a mean age of 6.85 years acceptable and fathers indicated 10.75 years. Overall, parents rated themselves or their spouses as the preferred educators for their children, with more than 90 per cent of parents in Elrod and Rubin’s (1993) study indicating this preference. In this study half of the parents viewed teachers and doctors as second-best. But half indicated a preference against police officers delivering CSAPE, believing children may be frightened.

Topics considered appropriate for inclusion have been researched in two studies conducted at roughly the same time but in different parts of the US. Wurtele and colleagues (1992) found strong parental agreement for children to be taught: to say no; report abuse; not keep abuse a secret; that they have a right not to be touched in uncomfortable ways; CSA is never a child’s fault. Elrod and Rubin (1993) found that a wider range of topics was considered appropriate content for preschool-aged children: good/bad touches; how to tell; who to tell; importance of telling; abuse is not the child’s fault; who abusers are; how to protect yourself; why abuse happens; what happens when you tell; what a child can do to help someone else; likelihood of abuse happening. These researchers also found gender differences in what was considered acceptable content by men and women, with men perceiving three topics as inappropriate for preschoolers: how to protect yourself, what happens when you tell, and abuse is not the child’s fault. Fathers viewed these topics as too complex for children and questioned preschoolers’ understanding of the concepts.

Both public and private methods were considered appropriate for the delivery of CSAPE. In Elrod and Rubin’s (1993) study, more than 50 per cent of mothers and fathers considered appropriate methods to be: private discussions; books and booklets; television shows and films; puppet shows; discussion groups; ‘what if’ games; role-playing; using toys such as dolls, and the formal school curriculum. There were differences according to gender, with fathers preferring books and ‘what if’ games and mothers preferring private discussions and ‘what if’ games.

**Discussion**

Our aim with this systematic review of the literature was to identify: i) what parents know about child sexual abuse prevention education; ii) what child sexual abuse prevention messages parents provide to their children; iii) what parents’ attitudes are towards child sexual abuse prevention education in schools/centres; and iv) their preferences for content in child sexual abuse prevention programs located in schools/centres. Despite the critical importance of parents to the success of CSA prevention programs (Sanderson, 2004), primary research literature on the topic of parents’ views about child sexual abuse prevention education is relatively sparse. Of the more than 400 articles surveyed, most focused on parents’ views about other broader but related topics such as parents’ views about CSA, or sex or sexuality education, and only a few of the studies reported findings directly related to parents’ views about CSA prevention education. Only 13 studies, conducted over a period of 22 years, met the criteria for inclusion in this review.

Most studies had been conducted in the USA, with convenience samples of mostly female participants. Therefore, as appropriately acknowledged by most of the researchers, the studies may be subject to selection bias whereby only those parents who were interested in or comfortable with the topic volunteered to participate. As noted by Babatsikos (2010), in this literature the effects of parental characteristics as measured in variables such as gender, age, ethnicity, socioeconomic status, and geographical location were not consistently reported and therefore seem under-investigated and under-theorised. Further, some replication of studies, and questionnaire items within studies, was observed; for example, Deblinger and colleagues’ (2010) study replicated and extended Wurtele and colleagues’ (1992) study, and the Chen and colleagues’ (2007) study partially replicated and extended the Chen and Chen (2005) study. Hence, some questionnaire items were common to these studies and also to Briggs (1988). The use of common items means that studies can be tracked over time and meta-analyses may be conducted in future to determine
the effects of common outcome variables. However, the replication of research instruments also means that local nuances may be missed. It is therefore important to ensure survey instruments are validated with local populations and adapted wherever possible while still maintaining the integrity of important outcome variables. Additionally, in the research reviewed here, findings were limited by the use of structured research instruments (surveys, structured face-to-face interviews) rather than open-ended methods such as focus groups or semi-structured interviews. On this point, the findings of our review converge nicely with those of Babatsikos (2010).

Overall, we found very little research regarding parents’ knowledge of CSAPE, reflecting an apparent neglect of parents’ views. Overall, the results suggest that parents who participated in this group of studies were aware of and sympathetic to the need for CSAPE, and considered CSA prevention programs as effective in preventing CSA. Parents with direct experiences with CSA had heightened awareness of and willingness to educate their children about CSA. Parents obtained information about CSA prevention from a range of sources, but predominantly from the mass media, making it vital that this medium provides accurate and relevant information for parents. Surprisingly, no studies explicitly addressed parents’ knowledge about CSAPE in relation to internet safety, although Deblinger and colleagues’ (2010) study incorporated three items about parents’ awareness of their children’s internet usage.

In the countries where parents’ delivery of prevention messages had been studied over time, there was a trend towards greater prevalence of discussions and detail in the contents of discussions. Not surprisingly, prevalence and content varied from country to country and is most likely to be an artefact of the country’s history and acceptance of CSAPE. There was a notable absence of research from Europe and the United Kingdom, where approaches to and acceptance of CSAPE may differ. Overall, the research consistently revealed that parents were unsure about the appropriate content for CSA prevention messages and when it is appropriate to deliver these messages. Many lacked the confidence, vocabulary and resources, and thus omitted the most crucial factors (for example who perpetrators might be and what to do in the event that CSA occurs) while focusing on less important concepts (for example stranger danger).

Parents’ attitudes towards CSA prevention education appear to play a key role in their uptake of CSA prevention practices with their children. Although the research reviewed here suggests that parents’ attitudes are generally positive, it is important to note parental concerns, particularly about the delivery of CSAPE in schools/centres. The research reveals several points important for consideration in future research, such as the need to determine what precise messages parents feel comfortable with and consider necessary to be included within school/centre-based CSA prevention programs, as well as at what ages they deem appropriate for this education to occur. It appears clear that CSAPE for parents should be hand-in-hand with CSAPE for children so that messages can be delivered consistently at home and at school. To this end, research is required into predisposing factors for parent participation in CSAPE (Tang & Yan, 2004), and recruitment and maintenance strategies (Wurtele, 2009). Although as yet untested in empirical research, Wurtele (2009) argues from long experience of conducting and evaluating programs that school-based programs should not be introduced without first preparing the home environment, thus ensuring that parents are familiar and comfortable with the content and delivery approaches, are able to handle disclosures, and know how and where to find support services.

Most notably, this review confirmed the considerable lack of research from within Australia, with only one study meeting inclusion criteria. This study was conducted more than two decades ago and, as Babatsikos (2010) points out, social contexts for children have changed with heightened media exposure and greater access to the internet, instant messaging, and online social networking. However, despite the prevalence of CSA prevention education programs in Australia—a national audit conducted 10 years ago found 178 distinct programs in use (Tomison & Poole, 2000)—there has been no further research on Australian parents’ views.

To avoid the methodological trend of using pre-existing measures, we propose that consultation is required to elicit Australian parents’ ideas about and preferences for effective programs and to carefully connect this with research-based evidence. In this future research it will be important to capture a diversity of views and to consult with parents from different geographical locations (metropolitan, regional, rural, remote), Indigenous community members, individuals from culturally and linguistically diverse backgrounds, and parents of children with special needs. An ideal way to conduct such consultation would be via focus groups carefully designed and facilitated to generate dynamic, interactive discussion (Vaughn, Schumm & Sinagub, 1996) about what CSA prevention education can reasonably accomplish.

**Conclusion**

The purpose of this review was to assemble and describe current knowledge on the topic of *parent views about child sexual abuse prevention education*
in order to guide future research and professional practice. This review highlights the paucity of research in this area. Answers to the research questions posed here are crucial for school- and centre-based prevention efforts and parent education. It appears, as Wurtele (2009) notes, that, although there have been enduring calls to enlist parents as partners in prevention, the real potential of parent-focused CSA prevention has not yet been realised. In the absence of Australian research, we conclude that study of Australian parents’ views is clearly warranted.

In 2009 the Council of Australian Governments (COAG) endorsed the national Framework for Protecting Australia’s Children as a long-term agenda to improve the safety and wellbeing of Australian children. It aims to achieve a substantial, sustained reduction in the incidence and prevalence of all types of child abuse and neglect by 2020. In relation to child sexual abuse, Priority Area 6 advocates strategies and services to ensure ‘children are protected from all forms of sexual exploitation and abuse through targeted prevention strategies …’ (COAG, 2009, p. 31). Before launching into the provision of parent education, however, it will be important to elicit parents’ views, so that we better understand their perspectives and can design programs with their intentions in mind.

**References**

* References marked with an asterisk indicate studies included in the systematic review.


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Young children growing up in the digital world of the twenty-first century have access to a wider range of information communication technologies (ICT) and engage with this technology at a younger age than ever before. Technology is becoming a normal part of young children's daily existence. ICT forms a valuable learning tool and gives children access to a world they have not previously experienced (Buckingham, 2004). Their use of ICT creates a tension between the child's right to access the opportunities it creates and the child's right to be protected from harm (Wilson & McAloney, 2010). Although child protection issues have always existed (Tomison, 2001), children's involvement in ICT, particularly the internet, has translocated these issues into cyberspace (Berson, Berson, Desai, Falls & Fernaughty, 2008; Stanley, 2001). Inherent in the use of ICT are risks and dangers not previously associated with childhood. Risks include cyberstalking and cybergrooming, cyberbullying, the promotion of inappropriate social and health behaviours, exposure to illegal and inappropriate content, and identity theft (Dooley, Cross, Hearn & Treyvaud, 2009). These risks can be summarised as the four Cs: content that is inappropriate; contact with inappropriate individuals; commercialism in the form of unwanted marketing and advertising aimed specifically at young children; and the culture of some aspects of online activity, including cyberbullying and the infringement of copyright laws by downloading music and films (Chen, 2003; Cranmer, Selwyn & Potter, 2009; Becta, 2006; Stanley, 2001) An additional aspect of cybersafety could be seen as the area of conduct, as any cybersafety program should lay the foundations for future ethical practice when using ICT (Livingstone & Haddon, 2009).

Cyber risks should not be considered a reason to deny children access to ICT, but as an opportunity to inform children about cybersafety strategies to increase their self-efficacy in ICT, so preparing them for a safer childhood.

Definitions of cybersafety

Cybersafety is defined as the safe and responsible use of information and communication technologies (Balfour, 2005; Beach, 2007), including protection against unsolicited marketing and advertising (Frehette, 2005). Cybersafety teaches children about the positive and negative aspects of ICT (Livingstone & Haddon, 2009), safeguarding against individuals who operate websites, attempt to contact children online, or to organise unsupervised meetings in person with children. Cybersafety education also involves guidance on cyberethics to form a responsible attitude to the use of ICT (Berson & Berson, 2004).
Educating young children about cybersafety is complicated, as young children often do not understand the social and technical complexity of the internet (Yan, 2006). This difficulty in understanding arises because the internet is virtual and cannot be experienced firsthand by the senses. Networks allow intrusion into lives in a way not readily understood by children. As computers are usually in a place children perceive as safe, the risks are not readily apparent to them. They do not understand that the computer can be networked and connected beyond the safe place to a world that can be both risky and dangerous. Young children also do not realise that material posted on the internet has no external controls or standards to subscribe to; it can be posted by anyone from anywhere. Often children of aged four years and younger lack the critical thinking skills needed to judge material, and so accept all material at face value (webAWARE, 2007). Although children can confidently engage with cybertechnologies in a physical sense, they lack the cognitive maturity to assess the suitability of the material, or the risk a new experience or challenge may present.

Buckingham (2004, p. 119) regards children as active participants who are ‘already sophisticated, discriminating and even critical users of media’. However, it is important to recognise the developmental limitations of young children for making social judgements and the skills needed to keep themselves safe when dealing with the complex challenges associated with ICT. As it is unclear how children understand technology, or use it to mediate social relationships, they need adult guidance to explain both the risks and benefits of ICT. Instruction by adults can help children to become aware of the dangers and to form strategies to keep themselves safe (Berson et al., 2008). Child protection programs are successful if children’s developmental level and cognitive abilities are considered, if abstract terms are avoided, and clear rules are repeated often so children retain the information (Sanderson, 2004).

The multi-layered approach to cybersafety

The multi-layered approach of tools, rules and education (Becta, 2005; Thierer, 2007) can be adopted by early childhood centres and families. The tools for blocking inappropriate material—such as child-friendly search engines, firewalls and filters—can be downloaded to computers used by children. In isolation, tools are not enough to safeguard children (Willard, 2003) as they can be penetrated by sophisticated software (Buckingham, 2004), and children may use a computer that has not downloaded these tools. As tools need time and expertise to set up, they may not be employed by teachers or parents who lack confidence and expertise in ICT (Dooley et al., 2009).

Rules form the next layer of cybersafety protection. Rules on policies, procedures and responsibilities create an awareness of cybersafety within both early childhood centres and family homes. It is important to resist adopting an externally formed one-size-fits-all policy. Each early childhood centre and family should discuss and construct cybersafety policies, so an understanding of the issues and reasoning behind the policy is gained by teachers, centre management, and families. Templates to assist the process can be downloaded (www.netsafe.org.nz). These rules form the foundation for other layers of cybersafety (Becta, 2005). One limitation of tools and rules is that they are used mostly by families from high socioeconomic backgrounds (Dooley et al., 2009), leaving children from other socioeconomic groups with less protection.

A rule that children can use the internet only with adult supervision provides an additional layer of safety (Willard, 2003). Parents who are frequent internet users are more likely to mediate their children’s use than are non-using parents (Livingstone & Haddon, 2009). If cybersafety is limited to the rule that children using the internet must be supervised by an adult, children may not develop the skills needed to be safe when adult supervision is not available. Moreover, a study in the United Kingdom observed that computers in early childhood programs were usually situated in quiet corners beyond the peripheral vision of teachers, and were usually used as a lone play activity, so the teacher’s guidance often focused on turn-taking and ensuring no damage was done to the equipment (Plowman & Stephen, 2007).

Hence, cybersafety reliance on tools and rules does not develop adequate knowledge for safe and responsible internet behaviour in children (Valcke, Schellens, Van Keer & Gerarts, 2007). Specific cybersafety instruction, beginning as soon as the child engages with technology, is vital to protect children from harm (Becta, 2007). This educational layer of cybersafety aims at arming the child with strategies to become safe and responsible cyber citizens (Berson & Berson, 2004), rather than disarming the technology through the use of tools and rules (Ianotta, 2001). Specific cybersafety instruction can include an exploration of ICT, including cybersafety sites, such as Hector’s World (www.netsafe.org.nz) and basic skill strategies, such as learning to click on Hector the dolphin. As with other forms of abuse, if children do experience problems with inappropriate behaviour online, they need to understand it is not their fault, they are not to blame, but they must tell an adult (Becta, 2005). Children can identify the adults (teachers and parents) to inform if they feel uncomfortable with an online incident. Role-plays of hypothetical situations can be included to integrate cybersafety strategies into children’s daily experiences, so children can act out appropriate responses of clicking on the safety button,
turning off the computer, and telling an adult (Wishart, Oades & Morris, 2007).

Media literacy and critical thinking are also useful skills for children to develop a sound understanding of cybersafety (Becta, 2005; Berson, 2002; Ianotta, 2001; Livingstone & Bober, 2005; Thierer, 2007). Such skills enable children to understand how to make informed decisions about using cybertechnologies (Berson, 2002) while remaining in control of their online experiences (Ianotta, 2001), confident that they are safe and legal.

The educational layer of cybersafety encourages children to understand that media messages are constructed, contain creative language, and are based on their own rules. Children slowly understand that media messages are interpreted differently by different individuals, and are constructed to gain profit and/or power (Thoman & Jolls, 2005). By posing open-ended questions to challenge the child’s thinking, critical thinking skills are developed that extend adult-initiated instruction. Some questions might be: What is this message? What do I like and dislike about it? How has it been put together? If I could feel, taste, smell or hear this message, how would I describe it? What might other people think about this message? Over time, children can be guided to notice who has published the material online, and to ask what view is presented. Children also need to understand that anything done in a digital world is available online forever and can be accessed by anyone at any time (Becta, 2005).

Guidance on the responsible use of cybertechnologies is also an important part of cybersafety education. Children may not realise that their actions have the potential to harm others. The consequences of interactions in the virtual world of cyberspace are not as apparent as the consequences of face-to-face interactions (Berson & Berson, 2004). A child who can see that teasing others while playing will hurt feelings may not link the same hurt feelings to online teasing, as no consequences are directly observable. Hence, cybersafety education should include guidance on internet use that ensures no harm is done to others, by teaching the rules and etiquette of online behaviour.

The role of the teacher in cybersafety

Cybersafety requires teachers to actively participate when children are using ICT technology. Studies suggest children are often left to play alone with computers while the teacher supervises several activities throughout the centre. In this case, children are reluctant to seek adult help, randomly click buttons, and fail to interpret dialogue boxes correctly. As adult supervision is vital to cybersafety, regular engagement with ICT has consequences for the teacher’s role in an early childhood setting (Plowman & Stephen, 2007). To teach cybersafety effectively, teachers need a thorough understanding of the risks and dangers of internet use and a familiarity with the relevant tools and policies.

Online resources help both teachers and children to become more aware and confident in cybersafety issues. An effective cybersafety program needs to include a coherent theoretical base combined with active, systematic and specific skills training involving both teachers and parents (Berson et al., 2008). Netsafe’s Hector’s World provides a series of safety messages presented by animated characters for children aged two–10 years. Netsafe™ also provides a free cybersafety tool in the form of a dolphin that, once downloaded, floats on the computer screen. If a child feels unsafe while using the computer at any time, a click on Hector the dolphin results in a colourful underwater screensaver appearing with a message to reassure the child that they have done the right thing and to inform an adult of what has happened (Netsafe, 2009).

The Net Alert initiative similarly provides educational activities suitable for young children (Netalert, 2009) with online links to animated worlds designed to teach cybersafety. As the information is given in animated form, the material on these websites can be viewed and discussed by teachers and children together to form the basis of the skills training component.

Online resources also give teachers a framework to discuss the more difficult aspects of cybersafety, the risks of inappropriate content, contact, commercialism and online culture, in a way that gives the children a realistic understanding of the risks involved, while not undermining their confidence in the use of ICT. As discussions about online safety may not be enough, meaningful prevention strategies are reinforced through active learning, such as role-play, that connects with children’s online experiences (Berson et al., 2008). Eventually, children must be able to recognise the different risks, and to use an appropriate strategy to deal with each. Cybersafety that begins in early childhood by teaching children the importance of clicking on Hector the dolphin and telling an adult is an introduction to other aspects of cybersafety. As evidence suggests that understanding is gained gradually, cybersafety education must be revisited as occasions arise.

Involving parents and families

It is common to involve parents in children’s learning so links can be made between learning in early childhood education and the home context (Berson et al., 2008). In cybersafety learning, there are additional reasons to build a partnership with parents.

Technology is not equally distributed throughout society. In Aotearoa New Zealand, for example, 60 per cent of Asian children have homes with internet access
compared to 52 per cent of European children, 25 per cent of Māori children and 19 per cent of Pasifika children (Statistics New Zealand, 2004). For some families, early childhood centres can provide a needed community service by imparting ICT expertise and cybersafety strategies. Young children today have never known a world without internet, whereas their parents may still feel uncertain when using it. Teachers have opportunities for professional learning about cybersafety issues that are not readily available for all parents. So it would seem responsible for teachers to involve parents in cybersafety initiatives (Jackson, Low, Gee, Butler & Hollings, 2007), to form a shared understanding of cybersafety. This could result in parents and families understanding how to detect problems and resulting dangers, as well as the appropriate strategies to deal with these, including reporting suspicion of harm to children.

Underpinning both the involvement of parents and the guidance given to children is the importance of dialogue and conversations on media use and cybersafety. This layer builds an understanding of the technological and social issues that accompany the use of cybertechnologies. As Thierer (2007, p. 136) states:

“At the end of the day, there is simply no substitute for talking to our children in an open, loving and understanding fashion about the realities of the world, including the more distasteful bits.

Through gentle conversations, children will gradually understand that the virtual world is not the real world, and that virtual friends may not be real friends, but they will do so in a way that empowers them to feel control over their use of technology, rather than afraid to engage with it.

**Conclusion**

Although cybersafety has not traditionally been part of the early childhood curriculum, the changing nature of society, in particular the increased use of ICT, now justifies its inclusion. Throughout this article the view is taken that, although ICT has proven to be a valuable learning tool for children in early childhood education, there are risks and dangers inherent in its use. Rather than being seen as a reason to deny children access to ICT, early childhood education should regard its increased use as an opportunity to impart safe and responsible practices to children so that they become ethical cybercitizens of the future.

**References:**


Thinking of children:
Democratic approaches with young children in research

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THIS ARTICLE EXAMINES THE research approach used in a case study of young children's involvement in a kindergarten environmental education program. Three key principles underpinned the research process. These principles were trusting relationships, respectful communication and democratic participation, and they were seen as ways to find solutions to ethical issues around children as participating partners in research. The approach allowed for children's voices to be heard and their contribution to the research valued. The premise of this approach is linked to a key principle of early childhood education for sustainability (ECEfS)—democratic participation which highly values the contribution that children make to discussions on environmental issues related to their lives and interests.

Introduction

In 2006 we implemented a small research project that involved three- and four-year-old children, their families and teachers in a case study on the environmental education program in their local kindergarten (Vaealiki & Mackey, 2008). As researchers, we valued the perspectives children would bring to the research, therefore the study was designed to maximise ways for young children to share their ideas. Because the project was investigating the way young children participated in and contributed to the centre's environmental program, it involved many interactions with the children, their teachers and their families. Therefore, we were committed to developing a research process that respected the rights of children and families and provided a range of ways for them to participate. This is in keeping with the views of Clark (2005) and Te One (2007), that research which values young children's active participation and listens to the diverse voices of childhood makes an important contribution to the discourses on children's rights.

We now feel it is timely to share the rationale behind the research approach and how this approach reflects some key tenets of early childhood education for sustainability (ECEfS): the child as a right-holder; meaningful dialogue and engagement with children; respecting and appreciating diverse contributions; and democratic values and principles of participation. These key ideas informed our engagement and relationships with the teachers, parents and, in particular, the young children who participated in the study, as well as having a strong impact on our style of communication and how we invited children to participate.

Participatory research in an ECEfS context

Increasing concerns about global warming and early childhood’s role in supporting sustainable practices has led to calls for more research in this field (Davis, 2009). Elliott and Davis (2009), key writers in the field of ECEfS, state that recent research has given evidence that ‘within appropriate pedagogies, young children have been shown to be significant players in the changes needed for creating sustainable futures’ (p. 71), yet we still require greater understanding of children’s participation. Davis (2009), concerned about the limited research base in ECEfS, has signalled the urgent need to increase research capacity in order for it to become a ‘legitimate new field of research endeavour’. Hence the need for researchers to disseminate not only their research findings but also the research approaches that uphold key ECEfS tenets. We hope our own research will generate discussion and reflection about children’s
engagement in future ECEfS research and encourage further innovation that is cognisant of children’s right to have a voice and share their perspectives about ECEfS.

There is a growing body of literature that discusses the rights of children in research and how children are recognised for the insights they bring to it (Clark, 2005; Smith, 2007; Te One, 2007). This has arisen because of the concern that children are often marginalised in research processes because of their perceived immaturity (Christensen, 2004; Qvortrup, 1994; Smith, 2008). This raises a number of questions about how children are involved in the research process and the ways children are given voice and opportunities to engage with the researchers and other participants. Robbins raises the issue of affordance and asks ‘what structuring of opportunities is occurring that affords or does not afford participation in and observation of community activities’ (2005, p. 145). We would add, ‘How are children afforded the opportunities to comment or give an opinion about their participation and learning through experience in their communities?’

A number of writers have also commented on ethical and participatory issues pertaining to research with children (Davis, 2009; Christensen, 2004; Thomas & O’Kane, 1998). Davis (2009) has recognised that the ethical and practical issues around working with young children are often the reasons for there being limited research, particularly in respect of the protection of children and their limited skills in understanding and expressing their ideas. Christensen (2004) suggests that three major themes must be considered when including children as participants in research: the ‘culture of communication’ requiring researchers to understand the ways children express and represent their ideas; the relationships between the children and the researcher; and the awareness of power issues, given that participatory research is a social process. We looked very carefully at these ethical and practical issues as we planned the research, focusing on solutions that were respectful and minimised the impact of researchers entering into the child’s world within the kindergarten environment.

Research background

The research took place in a New Zealand kindergarten over a period of six weeks and involved three teachers and 30 three- and four-year-old children. In addition, three parents and a kindergarten manager were interviewed. We gathered data through conversations with children and teachers, during routines and play episodes, collecting children’s drawings and photos of constructions, observational diaries, photos of the environment, learning stories, and formalised interviews with the adults. Combining data in this way allows children a range of different forms of expression through which they are able to express their ideas and contribute to the research findings.

The research method used in this study is compatible with the tenets of ECEfS and the sociocultural approach that underpinned the environmental pedagogy and curriculum practices at the kindergarten, allowing learning to take place within a dynamic cultural community where each person makes an active contribution (Rogoff, 2003). The sociocultural approach was chosen as it informed the inclusive and democratic principles we wished to use as researchers, given that children are ‘stakeholders’ in their learning community, having rights and a voice in the research process and involvement in collective decision making and action (David, 2007, cited in Davis, 2009).

Communication with children was vitally important to us and was paramount in establishing a culture of respect through which ideas could be exchanged, questioned and elaborated. As researchers in the field we needed to understand the full breadth of our responsibilities to those being researched, as there is the potential for inadvertently hindering children from being treated as authentic partners. There were times when we wished we could have revisited the moment, such as when an adult needs to stop talking and give space for a child’s ideas and expression to emerge.

In the following section we will explore some issues of the process that might typically be found in a research project involving young children.

Critical research issues

Gaining consent and informing participants

Gaining consent from young children is an ethical issue that is debated among researchers, since, legally, children do not have the authority to make decisions regarding their participation in research without adult consent (Te One, 2007; Thomas & O’Kane, 1998). Traditional approaches ask the parent or guardian to give consent for the child, often without the child being included in the decision making. In our research, however, we wrote a letter to each child explaining several ethical issues that could be expected to be covered in the consent process. The letter demonstrated our wish to uphold the democratic intentions we had for the research. It used language children would understand and invited them to ask questions and share any concerns they might have with the parent or teacher.

The first section of the letter was an introduction to the research project and us:

Glynne and Sue will be coming to your kindergarten to talk with you and the teachers about how you help your teachers care for the gardens, and the worms at your kindergarten and how you recycle your rubbish. Glynne and Sue are called researchers...
and that means that they talk with people to find out about the special things that they do and to find out about their ideas.

The second section dealt with the right of participants to withdraw from the process:

We know that sometimes it’s difficult to talk to someone you don’t know, so Glynne and Sue will understand if you don’t want to talk to them. If you start to talk to them and you don’t want to anymore that’s okay.

In the third section we explained the right for participants to have more information about the research:

If you think of any questions you want to ask Sue and Glynne you can ask them when you meet them at the kindergarten. You might like to ask your mum or dad or caregiver to write your question down and you can give this to your teachers.

Parents and teachers were given an information sheet so they could respond knowledgeably to the children’s questions and ensure continuity of discussion between kindergarten and home before we entered the kindergarten to begin gathering data. To indicate that children were informed about the research, parents signed a consent form confirming they had read the letter to their child.

Moving into the field
As researchers, we were aware that we were moving into the children’s space. To minimise any impacts from this ‘intrusion’, we set about developing a relationship with the children before any data was gathered.

On our first day at the centre we spent time getting to know the children and understand the rhythms and culture of the centre. The children were used to gathering for a ‘circle time’ to welcome each other. This was the first forum for the children and us to meet face to face. We explained that we were in their place to do some research and would be talking with them about how they help the teachers to look after the environment:

When we come we will write stories about the things you know about the environment. It’s called research. We want to search for new ideas. We want to know about your good ideas. What do you think research means?

Here are some of the children’s responses during the first ‘mat-time’:

It’s searching for things that are lost!
It’s searching for treasure.
It’s searching for slugs and snails!
My dad ate a slug!

We found their view of research to be inspiring. Their metaphorical suggestions on the meaning of research were very powerful. We were reminded of the way children teach us to view the world from a different perspective and felt this was very fitting for an environmental research project. Their view of research clarified and confirmed for us what we were there for and the importance of working closely with children in participatory research.

During this mat-time we demonstrated the digital voice recorder. The children sang and we played it back to them. They were all delighted to hear their voices from the recorder. Some children perceived what we were interested in, so enthusiastically proceeded to show us around and to point out other useful technologies found in the centre.

One child jumped up and said, ‘I’ll show you around’. She led us on a tour of the outside environment, past the garden where she proudly pointed out a sign she had made: Our Garden Please don’t step on the plants! ‘We water the plants any time’ she told us.

Another child wanted to show us how the camera printer worked and took great care to explain this.

The children took the initiative in conducting this tour of their kindergarten. Tours are effective ways of allowing the child to take the lead; to communicate their perspective, and to point out what it is important to them as well as what they perceive to be important to us (Clark & Moss, 2001). This reinforces the importance of engaging with children on their terms, believing in their competency and letting them lead the way.

Initial connections were formed easily during these introductory sessions as the children became used to our presence. We found ourselves quickly involved in their conversations and play. Conversations at morning tea time about worms, compost and recycling; conversations about inventions such as ‘penguin-saving devices’ to be used in Antarctica; children using local volcanic rock to build dinosaur caves; children in the garden talking about how they used the parsley in their egg sandwiches; children involved in sociodramatic play where they were the recycling people who sorted, trampled and flattened cardboard ready for the kerbside.

It was not until the third visit to the kindergarten that we felt our relationships with the children were such that we could begin recordings and note-taking as the children became involved in the daily program.

Ongoing data collection
Over the next few weeks we continued to gather a wide range of data. Interestingly, the children responded to us as researchers, not as teachers, and maintained through their actions and responses this clear delineation of the role. It was difficult to know
how the children understood this, but our openness about the research process and its purpose was one factor assisting the children. They continued to approach the teachers about the everyday issues around the behaviour of peers; availability of resources; sharing experiences and the routines of the setting. If a situation arose where we could be of assistance, or when invited by children to join with them, then we responded, even to tidying up at the end of a session as we felt we were included in the centre community, not separate from it.

We were very aware of reducing power issues between the researcher and those being researched, and therefore we employed a number of strategies. In general we waited for children to invite us into their play or routines. We engaged in conversations rather than ask questions which would elicit a response, and we ensured that data gathering could be as natural and unobtrusive as possible. We joined children at their morning tea time and became involved in conversations about the sorting of food and wrapping waste. In these moments we listened to children guiding new or younger children about how to sort their food scraps, and they explained to us their recycling system.

Children’s views need to be listened to carefully. Researchers should be tentative in their conversations with children because children may not always find it easy to express themselves in a way that adults understand. We were open to obtaining data through a variety of media, enabling children to have more opportunity to participate. We found that occasionally there was a conflict between what the children were saying and what we as adults understood this to mean. For example, as we chatted about the food that worms do not like, such as orange peel, one child made connections between the plastic wrap and the discarded peel. He said, ‘Plastic isn’t good to eat ‘cos it’s bad for your circulation’. It is likely this child knew that, in some way, the eating of plastic was not able to sustain life. This example illustrates the importance of listening to children as they attempt to understand the human impact on the natural world.

After the weeks of data collection we now needed to plan the most respectful way in which to withdraw ourselves from the kindergarten.

**Bringing closure to the research process**

Planning for closure is equally as important as entering the research field. As researchers, we felt privileged to have been involved in the everyday experiences of the kindergarten. When it was time to say goodbye, the question uppermost in our minds was how we should do this in a way that acknowledged the trusting relationships we had built and our commitment for this research to be underpinned with respectful communication and democratic participation. We had been open and respectful in our introductions and felt that the farewells should also reflect these traits. As researchers we had become part of the routine for a short while, and the children expected to see us on specific days. In order for the children to feel competent and empowered, they had to be able to predict our next meetings with some certainty. At the end, they needed to know when we would be leaving.

Therefore, bringing closure to our involvement with the children needed to be formalised. At the start of the project we observed an excitement and anticipation in the children and teachers about what was ahead. Closure, on the other hand, signals the end of the research process where connections and relationships are less likely to continue through regular visits to the kindergarten, and may in fact be ended.

In planning for the last circle time, we discussed the importance of thanking the children, sharing our initial learning from our visits, and reflecting on the research process. The last circle time began with the children, teachers, parents and ourselves gathering together at the end of the kindergarten session. This meant parents who had been involved in the project could also be present. We sang songs we had all come to know, and recalled with the children some of our shared experiences.

By bringing closure to our involvement, we felt we were able to be true to the democratic principles of trusting relationships, respectful communication and democratic participation that were embedded in our research.

**Some final reflections**

Engaging with young children in research often means traversing challenging terrain and finding new ways of working with children. The research process can assist with providing authentic and democratic ways for young children to share their ideas and think about environmental and social issues in their learning communities that will be of value to the ECEfS research field. Through our understanding and application of research, working with young children has opened doors to a wider range of perspectives on how children’s voices add to the research.

We strongly advocate that researchers who develop projects involving young children keep to the forefront of their minds the principles of respectful communication, trusting relationships and democratic participation. By doing this, researchers empower young children to strengthen their role as citizens in their communities, today and for tomorrow.
References


Supervision and assessment of the early childhood practicum: Experiences of pre-service teachers who speak English as a second language and their supervising teachers

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FINDINGS ARE REPORTED from the third phase of a small exploratory study that aimed to understand how pre-service teachers from culturally and linguistically diverse (CALD) backgrounds, and those who supervise them in early childhood settings, experience practicum assessment, and the extent to which practicum assessment takes into account pre-service teacher diversity. Discourse analysis (Foucault, 1972), applied to interviews with pre-service teachers and supervising teachers, revealed a persistent ‘discourse of denial’ of cultural difference on the part of supervising teachers, who nevertheless genuinely attempted to negotiate the inevitable challenges posed by the supervision of CALD pre-service teachers. The paper concludes that supervising teachers were at pains to produce and perpetuate a liberal humanist discourse within which all human beings are ‘the same’ or should be equal, even as they attempted to recognise CALD pre-service teachers’ learning styles and needs.

Introduction

The practicum is an integral component of teacher education courses, but it can be problematic for pre-service teachers from culturally and linguistically diverse (CALD) backgrounds, and those who supervise them in early childhood settings, to supervision and assessment (Cruikshank, 2004; Ortipp, 2006; Phelan et al., 2006; Santoro, 1999). This paper reports key findings from the third phase of a small exploratory study that aims to understand how pre-service teachers from CALD backgrounds, and those who supervise them, experience practicum assessment, and the extent to which practicum assessment takes into account pre-service teacher diversity.

Earlier papers (Nuttall & Ortipp, 2009; Ortipp & Nuttall, 2008) reported findings from the first two phases of the study. In phase one, data was generated through analysis of early childhood practicum handbooks volunteered by four Australian universities (two in Victoria and two in New South Wales). In phase two, semi-structured interviews were conducted with early childhood pre-service teachers who speak English as their second language. In this paper, we briefly summarise findings from the handbook analysis and pre-service teacher interviews, then report more fully on the semi-structured interviews with early childhood educators who had experienced the role of supervising teacher for pre-service teachers from CALD backgrounds.

Given the very limited research in this area, the study was primarily exploratory and the small scale of the study reflects our intention of identifying and testing important concepts in the form of a pilot, which might help us frame more extensive investigations in the future. The three main research questions were:

1. To what extent do present approaches to the assessment of the practicum, as described in key university documents (e.g. practicum handbooks), take into account the diversity of the pre-service teacher population, and the ways in which their supervising teachers might respond to and support this diversity?

2. What are the particular and characteristic struggles (if any) that pre-service teachers from
CALD backgrounds face in successfully meeting the assessment requirements of their practicum placements in early childhood settings?

3. What are the perspectives of teachers who have supervised and assessed CALD pre-service teachers, particularly any challenges and/or opportunities they have experienced?

Context and rationale for the study

This study stands at the intersection of several pressing issues for initial teacher education in Australia. First, there is the issue of teacher supply in early childhood education. There is an increasing need for degree-qualified early childhood educators, to the extent that the Federal Department of Education, Employment, and Workplace Relations (DEEWR) is funding an additional 1280 pre-service places in early childhood teacher education across the three years from 2009 to 2011 (DEEWR, 2009). This strategy is itself a reflection of increased investment in early childhood education, driven by the influence of human capital theory in governments’ thinking about education, child care and the economy (Brennan, 2007). Many of these 1500 teacher education candidates are likely to be women who have migrated to Australia from countries where English is not the main language in everyday use and who have arrived in Australia to find that work in early childhood education settings is one of the few employment avenues open to unqualified migrant women.

Second, there is an acknowledgement that graduates of teacher education programs need to be well-equipped to work with diverse students, including refugee and migrant children, within a global market in education (United Nations High Commission for Refugees, 2004). Third, there is the extent to which Australia’s economy relies on the participation of full-fee-paying international students, including pre-service teachers (DEST, 2005; Ryan & Carrol, 2005). Most importantly, there is the issue of ‘unrecognised and unconscious ethnocentrism’ in communicating with CALD pre-service teachers (Han, 2006, p. 28; Hatton, 1996), including the lack of cultural sensitivity on the part of supervising teachers in the practicum (Cruickshank, 2004). This is both an issue for teaching and learning, and an issue of human rights.

Note that this study is not only concerned with the experiences of ‘overseas’ pre-service teachers. Many pre-service teachers in Australian universities appear (and may position themselves as) Anglo–Australian but are second-, third- or fourth-generation descendants of the large number of migrants to Australia during the past century, and do not speak English as their home language. By inviting CALD pre-service teachers in general to participate in the study, not just international students, we hope to be able to compare and contrast the experiences of pre-service teachers who may be (incorrectly) assumed to speak English as their first language with those who clearly do not. We did not include Indigenous Australian pre-service teachers in our interview sample. This was not because we wish to see these pre-service teachers excluded from participation in empirical work in this area, but because we understand Indigenous students face challenges which are additional to, as well as similar to, non-Indigenous CALD pre-service teachers (Fleet, Kitson, Cassady & Hughes, 2007). We believe the practicum experiences of Indigenous Australian pre-service teachers are worthy of study in their own right.

Research about CALD pre-service teachers

There is some research into initial teacher education with respect to diverse teacher education candidates, and the need for teacher education programs to prepare culturally sensitive and competent teachers (Allard & Santoro, 2004; Ball, 2000; Milner, 2003). These authors also conclude there is little research about the cultural competence of teacher educators, including the educators in schools and early childhood centres who play a significant role in the supervision and assessment of pre-service teachers during professional placements. This is troubling, given the need to increase and retain the numbers of CALD students in teacher education programs (Hartsuyker, 2007; Prime, 2001).

Many of these pre-service teachers in Australia are from neighbouring Asian countries (Santoro, 1999; Han, 2006), and some authors have expressed concerns about the retention rates for these students and the difficulties they face achieving success in course work and the practicum (Cruickshank, 2004; Clark & Flores, 2001; Han, 2006). Santoro’s (1999) case study of the experiences of two Chinese-born-and-educated pre-service teachers on placement in two different Australian secondary schools suggests that racist discourses exist in schools and impact negatively on pre-service teachers’ placement experience. These findings are consistent with research into performance-based assessment, which indicates that assessor prejudice regarding race, appearance, language and ethnicity has the potential to affect judgement, particularly in high-inference performance-based assessment (Gillis & Bateman, 1999; Villegas, 1997). These findings suggest the practicum assessment process may not be equitable for pre-service teachers from non-English-speaking backgrounds.

However, there is little research that specifically examines professional placement curriculum for hidden cultural expectations. In a small study exploring tertiary supervisors’ perceptions of the practicum assessment process (Ortlipp, 2006), analysis of practicum documents (handbooks of requirements, assessment procedures and
Theoretical, methodological and ethical frameworks informing the study

The theoretical informants to the study reflect our separate but overlapping preoccupations as researchers: in the case of the first author, concepts derived from post-structuralism, particularly Foucault’s (1980) analysis of power-knowledge and how this phenomenon can be identified through interrogation of the discursive nature of social relations; and in the second author’s case, the attempt to understand the shared, complex processes of professional learning in institutional settings through the use of Engeström’s (2001) ‘third generation’ of cultural-historical activity theory (CHAT). While these approaches share common concerns, particularly the ways social relations and contexts afford and/or constrain particular forms of knowledge, we do acknowledge that they have fundamental ontological differences. These are principally the idealist nature of post-structuralism versus the materialist stance of CHAT. But we argue that adopting these frameworks in tandem allows us to address the weaknesses of each. For example, Engeström (2008) has recently argued that his formulation of CHAT pays insufficient attention to issues of power and how it circulates within learning systems; a Foucauldian perspective can sensitise researchers to these features.

An example of this ‘in tandem’ approach played out in our analysis of the nature and function of the practicum documents brought together for the study. Drawing on post-structuralist principles, we used Fairclough’s (2003) approach to critical discourse analysis to conduct a fine-grained analysis of the documents themselves. At the point of the interviews with the supervising teachers we drew, by contrast, on Engeström’s work to help us understand how such handbooks function as mediating artefacts within the complex activity system known as ‘the practicum’.

The interviews with pre-service teachers and supervising teachers were initially coded using a priori constructs such as ‘communication’ and ‘expectations’, then open coded for unanticipated findings. We also tried to remain alert to important narrative vignettes, using Clandinin and Connelly’s (2000) typology of narrative content. In this paper we report on our use of discourse analysis (Foucault, 1972), undertaken to identify the discourses within which supervising teachers locate and make sense of their supervision and assessment of teacher education pre-service teachers from CALD backgrounds.

Interview participants were recruited from an early childhood teacher education course in metropolitan Victoria that enrolls significant numbers of pre-service teachers from CALD backgrounds, both as full-fee-paying international students from non-Anglophone countries (principally in south-east Asia) and as Australian residents or citizens who do not speak English at home. Care was taken to ensure that participants were not recruited until their results in practicum studies had been finalised, and the recruitment and interviewing of pre-service teachers and supervising teachers participating in the study was designed to ensure their participation was not made known to university staff, including interview transcripts being de-identified prior to analysis by the authors.

Findings from the analysis of practicum documents and interviews with CALD pre-service teachers

An earlier paper drawn from this study (Ortlipp & Nuttall, 2008) provides a detailed description of how the practicum documents—which included handbooks, assessment pro forma, and unit study guides—were analysed. In short, we identified a startling contrast between the expectation that pre-service teachers would learn to teach culturally and linguistically diverse students and the possibility that the pre-service teacher might her/himself be from a non-Anglo–Australian background. There were 46 discrete items across the data set that exhorted pre-service teachers to:

... plan and implement curriculum that is responsive to group dynamics, children’s needs and interests and that acknowledges gender, cultural, ethnic and developmental differences (Unit description, Preschool placement handbook, University 3).

or

... observe and respect the culture/custom of the school/centre at all times (Pre-service teacher placement responsibilities, Preschool placement handbook, University 4).

By contrast, only one item in the data set hinted at the possibility that pre-service teachers might:

... differ in background, prior experiences, personal styles, beliefs, values, interests, strengths and learning styles (ECE handbook, University 2).
A second feature of these practicum materials was the expectation that the pre-service teacher will be proactive in initiating discussions about their work with the supervising teacher and will take an active role in evaluating themselves and contributing to the assessment process:

It is important … that [pre-service teachers] have the opportunity to explain their decisions and behaviour. This is part of developing their confidence and skills in evaluating themselves … as well as learning how to justify and defend their work. At the same time, [pre-service teachers] need to demonstrate compromise and conciliation … (Child care placement handbook, University 4).

But these are practices that are privileged within a ‘western’ discourse of teaching and represent western ways of speaking, acting, interacting, thinking and being an appropriate pre-service teacher (Ortlipp, 2006). Through the assessment criteria and the roles and responsibilities of pre-service teachers outlined in the practicum handbooks for each university, the documents produce, reproduce and circulate particular understandings of what it means to be a ‘good’ or ‘appropriate’ pre-service teacher on professional placement. Early childhood pre-service teachers are constructed as: professional, reflective, creative, respectful, responsible, cooperative, courteous, enthusiastic, confident, and someone who uses her/his initiative. Supervising teachers are required to interpret these requirements and criteria and, in doing so, draw on their own cultural understandings of what it means to be an appropriate early childhood pre-service teacher undertaking placement in an Australian early childhood service.

Our interviews with pre-service teachers from CALD backgrounds are an attempt to get closer to the lived experience of assessment on the practicum for these pre-service teachers. In Nuttall and Ortlipp (2009), we describe the case of Sue, a Singaporean Chinese student, and the breakdown of her final practicum in her four-year undergraduate program. In our analysis of the transcript of the interview with Sue, we were struck by the characteristic features of her experience we have each (and separately) observed during many years as teacher educators. On the basis of this analysis, we hypothesised that the path to ‘failure’ on the practicum proceeds in a predictable sequence. First, the supervising teacher either overviews or misinterprets, or acknowledges at only the most superficial level, the pre-service teacher’s ‘difference’:

Sue: I got the sense from the teacher that ‘You are Asian, you are this, this’. So [the teacher had] that mindset of ‘You are like that’ but, in fact, I am not, but it’s really hard to erase that image in her head.

Second, the supervising teacher draws on racist typologies to orient their own cultural knowledge to that of the pre-service teacher. These stages are then closely followed by a third, when communication (poorly established from the start) finally breaks down:

Sue: My relationship with her is just that we don’t talk, we usually wouldn’t talk to each other, because if I do say anything it would be a very short answer, like, there’s nothing to say.

By this stage, the pre-service teacher faces a turning point: to conform or to rebel. Sue conformed, to the extent that she imitated her supervising teacher (e.g. by raising her voice at the children, ‘… just doing what she says you’re not doing, but that may not be your belief or how you would have done it’). The fifth and final stage of this sequence is the reflection or de-briefing phase, either with a university staff member or a friend; in Sue’s case, this happened both with her lecturer and with the interviewer.

Sue aligned her behaviour with that of the supervising teacher, conforming to her expectations for practice and submitting to the teacher’s judgement that Sue’s approach to teaching was inappropriate. Sue’s practicum manual, like that of all four universities, stated that she was expected to be proactive in resolving differences with her supervising teacher, but Sue told the interviewer, ‘I felt intimidated if I do it [i.e. be proactive] and I tried to avoid that aggressive argument so I usually just take it in’. Sue’s decision to ‘just take it in’ speaks of the embodied experience of institutional violence; Sue told the interviewer she eventually had to seek counselling to help get over her experience on this placement.

Note that the breakdown of Sue’s practicum is not the issue per se in the context of this study; pre-service teachers of all backgrounds can struggle with professional expectations. The salient point about Sue’s experience is that everything she attempted and encountered on her practicum was understood through the rubric of ‘difference’. Sue’s previous practicum placements had all been very successful, yet even then she was primarily positioned as ‘Asian’, with supervising teachers suggesting to Sue, ‘Why don’t you talk about where you come from with the children?’, and Sue said, ‘things like that’.

We do not claim that Sue’s experience is universal or even typical for CALD pre-service teachers. Each of the pre-service teachers interviewed so far has had their own, distinctive, stories to tell. But the interviews do share one salient feature: the erosion of the pre-service teachers’ diversity through discourses of denial. It is to this finding that we also turn in our analysis of the interviews with the supervising teachers.

Findings from interviews with supervising teachers of CALD students

The supervising teachers we interviewed had not necessarily supervised any of the pre-service teachers participating in the study; they were recruited separately...
and the design of the study ensures possible links cannot be identified. As with the student interviews, the interviewer was not known to the supervising teachers, and any potential identifiers (including teacher names, pre-service teacher names, and centre names) were removed from the interview transcripts prior to analysis.

In their interviews, the pre-service teachers made it clear they wanted their supervising teachers to acknowledge the effects of cultural differences within the context of the practicum. The pre-service teachers were comfortable with what they perceived as their difference(s), attributing some of these differences to their culturally based experiences and understandings of teaching and learning. However, they were aware that they would have to learn to ‘fit in’, and expressed the desire to teach in ways the children were familiar with in Australia: to understand how Australian teachers teach. Myles, Cheng and Wang’s (2006) study of foreign-trained teacher candidates showed that candidates were very aware that they would have to adapt their thinking and practice to their new environment in order to ‘fit into the community of practice’ (p. 239) and be assessed positively for their teaching practice.

In this section we focus on the most persistent discourse we identified through discourse analysis (Foucault, 1972) of the supervising teacher interviews, the ‘discourse of denial’, and the complex negotiations supervising teachers undertook to both maintain this discourse and attend to the inevitable challenges posed by the supervision of CALD pre-service teachers.

A juggling act: Acknowledging difference within a ‘discourse of denial’

A discourse of denial is characterised by not wanting to talk about racial difference, arguing, ‘they’re all the same to me’. Phelan and Luu (2004, citing Frankenberg, 2003) describe this as “a mode of thinking about race organized around an effort “not” to see, or at any rate, not to acknowledge, race differences” (p. 185). One teacher described her experience of supervising an Indian pre-service teacher in these terms:

… I don’t see her as anything different; yes, she’s darker-skinned, but I do not see her as Indian; she’s a woman like me, she’s wanting to be a teacher like me, she’s a mum, like me. I don’t look at the culture. I mean, yeah, she does have different traditions and different things, but I’ve never [been] sort of one [to say], ‘Oh, you’re that or you’re that’—I think because we have got on so well, we’re really good friends … (Interview, supervising teacher 1, lines 61–67).

This statement concurs with Phelan and Luu’s (2004) argument that supervising teachers desire to have a ‘smooth, relaxed and pleasant interaction’ (p. 186) with pre-service teachers, with no conflict, rather than acknowledging difference and then having to deal with the implications of that difference. The repeated use of the phrase ‘like me’ signals the normative position taken up by this supervising teacher. This position, in turn, allowed her to identify specific benefits of pre-service teachers’ differences without having to amend her own cultural world-view.

However, the supervising teachers in our sample did not ignore difference per se; rather, they found ways to manage notions of difference within a discourse of denial. We identified at least three strategies they employed to manage this juggling act:

1. Invoking the ‘usefulness’ of difference.
2. Attempting to ‘normalise’ the student.
3. Engaging in ‘compensatory’ pedagogy.

These strategies were all focused on the supervising teachers’ desire to ensure success for the CALD pre-service teacher on the professional placement.

The ‘usefulness’ of difference

The supervising teacher quoted above saw another pre-service teacher’s fluency in Tamil as ‘fantastic’:

… when she first started with her diploma here, on placement, it was fantastic having her at the beginning of the year, because we had a few children finding it very difficult to settle, and hadn’t really left mum before, and because she had the same language, she was really able to hone in on those couple of children. And they settled brilliantly because she was able to talk to them in language that they could understand, and support them and help them and, oh, just thank goodness you’re here … (ibid, lines 305–313).

This scenario speaks not only to the diversity of pre-service teachers and the diversity of children in early childhood services, but also to the way maintenance of a normative position regarding Anglo–Australian pre-schooling renders cultural difference amongst pre-service teachers as merely ‘useful’, rather than central to their strengths, experience or identity as teachers. This was underscored when this supervising teacher said:

There’s another kinder in the system where [the same pre-service teacher] has spent a lot of time, and she would have been very, very useful being Indian over there (ibid, lines 392–400).

Normalising the pre-service teacher

A more explicit form of the discourse of denial is pressure on CALD pre-service teachers to develop ‘an Australian perspective’:

… this woman [the pre-service teacher] concentrated on the children that came from her
cultural differences, from India, or from Sri Lanka, and not anybody else, and when we were choosing children to look at, she wanted to take only little ones from her culture, which wasn’t good enough; she has to look at all of the children. So I said to her, ‘No, you cannot have any from your own culture, I know that that sounds really hard, but next year you’ll be doing this on a full-time basis. Why don’t you have a look at children outside of your culture?’ And I said, ‘That’s one suggestion’ … she accepted that, and I said, ‘It’s forcing you to look at things from an Australian perspective’, and I said, ‘You will be working with Australian parents, who will insist on Australian perspective’ (Interview, supervising teacher 2, lines 114–121).

Again, this supervising teacher was alert to the pre-service teacher’s difference but only from the normative position of her own perspective:

I said, ‘The beauty of you is that you have a second perspective that you’re able to give these Australian children and that will be appreciated [by Australian parents] only when you’re able to communicate with their children’. And I said, ‘If you can communicate with the Australian children, then you’re able to win the parents over, whereas if you can only communicate with children from your culture, then you’re going to run into problems from other parents’. And I said, ‘That’s really not appropriate to do, it’s not a practical thing to do’. So I asked her to go home and think about it, and she was quite happy to do that, or at least I think so, I wasn’t sure (ibid, lines 122–130).

Our point here is not to position ourselves as superior in some way to perceived inadequacies we might identify among the teachers participating in this study. This would be not only unethical and unhelpful, but inaccurate.

A ‘compensatory’ pedagogy of supervision

For example, there was considerable evidence across the interviews with supervising teachers of the extra effort they put into supervising CALD pre-service teachers, effort which in our experience is not always reflected in on-campus programs:

I find that you do have to spend that extra time and it’s not necessarily also giving feedback in one lump. With all students you like to give ongoing feedback but this is more intense ongoing feedback. Or they require a little bit more time for that interaction and to demonstrate and to get them to observe and reflect on what they’re seeing (Interview, supervising teacher 3, lines 80–85).

Another of the supervising teachers described how she amended her supervisory pedagogy to provide additional support for CALD students:

What I found with [one pre-service teacher], I would actually have to sit down and spend a little bit more time explaining the processes of how I did a curriculum, or she would come back from a tutorial and say, ‘We did this’, but she was still floundering (Interview, supervising teacher 1, lines 114–118).

This teacher went on to describe how this pre-service teacher frequently sought her advice in making sense of on-campus experiences that were challenging or too linguistically complex:

… you could see that she was struggling to understand what it was that was required of her so, with her, yes, I think I did spend, not a huge amount of time, but I did spend more than I would have [with another CALD pre-service teacher] just explaining and clarifying to make sure she really understood what they were expecting of her for uni and, you know, something that had been discussed in the tutorial. She’d ask, ‘Well, what does that word mean?’ [and] although it may have been explained in the class, she would come back and say, ‘But I still didn’t get it’ … (ibid, lines 127–137).

This tendency to erase difference, while also to capitalise upon and to compensate for it, is highly paradoxical. In our final discussion, we attempt to find a way through this contradiction.

Unpacking a contradiction

In analysing each of the teacher interviews, we have struggled to explain the contradiction evident in the teachers’ description of their thinking. We have come to see this contradiction as akin to, and symptomatic of, a wider discourse in early childhood education: a reluctance to let go of notions of ‘equality’ in favour of notions of ‘equity’ and the inevitable pedagogical challenges this would bring. We see this as a residual form of the discourse of individual development, still commonplace in Australian early childhood services and, as evidenced by our analysis of professional placement documents, in teacher education programs as well (cf. Nuttall & Doecke, 2008). One of the supervising teachers signalled this desire to treat everyone as equal by seeing them as individuals:

I don’t think there’s anything particular to [CALD pre-service teachers] because I was thinking about it and, in terms of [pre-service teachers], I don’t think I can categorise them into [whether] this was a particularly common thing, because I think with all [pre-service teachers], they’re all different and they all have particular needs. And it’s more, for me, not a particular area that they’ve had difficulty with, but the communication between, say, the supervisor and themselves (Interview, supervising teacher 3, lines 51–56).
The supervising teachers participating in this study are not colour blind—they know their pre-service teachers are Asian or Indian—but they are at pains to produce, reproduce and perpetuate a liberal humanist discourse within which all human beings are ‘the same’ or should be equal. However, ‘liberal humanism makes it difficult for [the supervising teacher] to even acknowledge difference, for fear that they are being discriminatory’ (Phelan & Luu, 2004, p. 187). As early childhood educators and teacher educators, we recognise the desire to focus on individual needs regardless of culture as highly characteristic of early childhood education in Australia. Even the notion of ‘cultural appropriateness’ is conflated with or seen as part of individual appropriateness (Bredenkamp & Copple, 1997), which views culture as an individual phenomenon, a part of them and their identity, and not as something beyond the individual, determined by society and circulating through discourse.

It is clear that the supervising teachers participating in this study so far are employing pedagogical practices that flow from their understandings of CALD pre-service teachers as learners and their attempts to make sense of pre-service teachers’ behaviours. Strategies such as showing and demonstrating (because of perceived or actual difficulty in employing concepts), spending more time with students to speak with them and discuss their written work, slowing down their speech, and suggesting to CALD pre-service teachers that they sit aside (in the preschool or at home) to process their thinking (including the time needed for any necessary language-switching to occur) were all employed by the participating supervising teachers. The same teacher who exhorted her supervisees to develop ‘an Australian perspective’ also explained how she took time to build trust, find out about pre-service teachers’ cultural and family backgrounds, and identify their needs.

The sensitivity to the CALD pre-service teachers’ learning styles and needs, and the gathering of information about backgrounds and experiences, suggests that the supervising teachers were drawing on what Pacini-Ketchabaw and Schecter (2002, p. 408) refer to as a discourse of ‘intercultural sensitivity as a pedagogical tool’, within which teachers demonstrated sensitivity to children’s differing learning styles and needs and sought input from families about issues that would impact on students’ learning. Pacini-Ketchabaw and Scheter (ibid) argue that this discourse is characterised by a lack of reciprocity: teachers are sensitive to difference and seek information about differences in order to meet children’s needs and help them succeed within the curriculum, but they don’t use the information they garner about their diverse students in order to integrate their experiences into the curriculum. Similarly with the supervising teachers, their intent was to meet the CALD pre-service teachers’ learning needs and ensure success in an unfamiliar context, rather than to find ways to integrate the pre-service teachers’ experience, knowledge, and approaches to teaching and learning into the early childhood curriculum. Other than the ‘usefulness’ of the CALD pre-service teachers linguistic contribution with CALD children, there was little evidence that supervising teachers value the culturally distinctive ‘funds of knowledge’ (Moll, Amanti, Neff & Gonzalez, 1992) that CALD pre-service teachers bring to professional experience placements.

As stated earlier, our concern is not to ‘point the finger’ at supervising teachers. As with Pacini-Ketchabaw and Schecter (2002, p. 412), ‘[W]e assume as an analytic premise that teachers are generally without ill intent or deliberate bias; rather we emphasise the insidious and pervasive role of dominant discourses within educational institutions’. It is to the insidious nature of institutional discourse that we find ourselves returning as teacher educators.

**Conclusion**

Inasmuch as placement handbooks and assessment pro-formas represent institutional discourses, the discourse of denial is far more prevalent in the official documents we reviewed than in the accounts of the supervising teachers we interviewed. None of the teachers in this study had received specific advice through in-service programs offered by universities or through contact with individual university lecturers. In the absence of this support or advice, supervising teachers inevitably draw on the discourses of difference they have available to them in order to engage in supervisory practice. Achieving a truly differentiated curriculum for professional practica will require access to different discourses of difference. At the institutional level, this means producing and circulating alternative discourses through official documents that overtly acknowledge pre-service teacher difference. It also means providing for the possibility of diverse experiences, knowledges and approaches to teaching and learning being integrated into the early childhood curriculum by attending to the wording of requirements and assessment criteria. At the site of the enactment of practicum supervision and assessment, it means enabling supervising teachers to access a ‘discourse of diversity as curriculum’ (Pacini-Ketchabaw & Schecter, 2002, p. 409) within which CALD pre-service teachers’ diverse experiences, knowledges and approaches are valued and integrated into the curriculum in meaningful and authentic ways.

**References**


The exclusion of children with disabilities in early childhood education in New Zealand: Issues and implications for inclusion

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In New Zealand, legislation and policy states that every young child has the right to participate in, and receive, a high-quality early childhood education. However, this is not always the case for children with disabilities and their families. This article addresses issues related to the exclusion of such children in early childhood education in New Zealand. In particular, the article highlights the exclusive cultures, policies and practices that compromise the nationally legislated policy of inclusion for children with disabilities and their families. It also offers ideas on bringing about changes in thought and practice that might help to progress inclusion.

Introduction: Background to the study

In early childhood education in Aotearoa New Zealand, as in other countries, we are trying to address inequities and injustices for children with disabilities and their families. In Aotearoa New Zealand, we have an array of legislation and policies (Ministry of Education 1996a; 1996b; New Zealand Government 1989; 1993; 2008), strategies and plans (Ministry of Education, 1996c; 2002; Minister for Disability Issues, 2001) and other documents (Ministry of Education, 1998a; 1998b; 2000; 2004) that support the rights of all children and their families to a non-discriminatory, inclusive early childhood education. Further, as a signatory to the United Nations Convention on the Rights of the Child (United Nations, 1989) and the United Nations Convention of the Rights of Persons with Disabilities (United Nations, 2006), New Zealand society (including its educational environments) has an obligation to implement these human rights treaties and ensure that no child and family suffers discrimination.

Given that we have such laws, policies, plans, strategies and international agreements in place, it can be hard to understand why some parents of children with disabilities have huge difficulties in accessing a non-discriminatory, inclusive and quality early childhood education for their children. For example, a family made a complaint to the Human Rights Commission about an early childhood centre, stating that the centre had discriminated against their child and family because of disability (Rodgers, 2001). The centre had accepted the child’s enrolment but stipulated that his parents had to pay for an additional six hours of teacher-aide time per week and that he had to be collected by 4.00pm rather than by 5.45pm when the centre closed for the day. The Human Rights Tribunal found the centre had breached Section 57 of the Human Rights Act by setting such conditions on the child’s access to, and participation in, the centre. The parents removed their child from this centre after the owner refused to reconsider these conditions. They enrolled their son at another early childhood centre, farther away from their home, where he was accepted and included without conditions attached. At the hearing, the mother reported that the first experience of early childhood education had been extremely stressful and had had a disruptive effect on the whole family (Rodgers, 2001).

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As early childhood teacher–educators, we are interested in the area of disability in early childhood education and...
have asked why the inclusion and teaching of children with disabilities in regular educational settings is seen by some as impractical and a problem. It is concerning that some parents of children with disabilities have to battle to get early childhood settings to accept, include and teach their children when we have a legislative and policy context emphasising that discrimination and exclusion because of disability is not acceptable (Brown, 1999; Macartney, 2008a; 2008b). Clearly, changes are required to ensure the rights of all children with disabilities and their families to access and participate in high-quality early childhood education are protected and upheld (Gordon-Burns, Purdue, Rarere-Briggs, Stark & Turnock, 2010).

Gathering information about the inclusion and exclusion of children with disabilities and their families in early childhood education

Kerry Purdue, one of the authors of this paper, undertook a study to find out more about inclusion and exclusion in early childhood education and what we might need to do to create early childhood settings that are welcoming, positive and responsive to all dimensions of human diversity. The study investigated the meaning of inclusion and exclusion for children with disabilities and their families, and how inclusion and exclusion was experienced by children, parents, early childhood teachers and itinerant professionals within some early childhood settings in New Zealand (Purdue, 2004).

An interpretivist approach was used in the study as a paradigm position for seeking understandings about children with disabilities and their families. Interpretivist research considers a world where reality is socially constructed, complex, and open to change. Interpretivist researchers strive to learn about a particular issue from people who experience the issues being investigated (Ferguson & Ferguson, 1995). Thus, by letting parents, children, teachers, support staff and other professionals tell their own stories, in their own words, about their everyday experiences and understandings of disability in early childhood settings, Kerry hoped to gain insight into how disability is constructed and to gather information on inclusive and exclusive cultures, policies and practices.

The research involved a critical examination, via three case studies, of how early childhood centres responded to children with disabilities. The first involved gathering information at seven full-day workshops undertaken at seven locations in the North and South Islands of Aotearoa New Zealand. The workshops aimed to provide participants with an opportunity to examine issues and developments in the inclusion of children with disabilities in early childhood settings. Participants included 115 early childhood teachers, 13 parents of children with disabilities, 11 playcentre parents, 15 support teachers, two teachers from early childhood special units, and one health professional from 104 early childhood centres. The data for this case study comprised verbal and written statements from participants; verbal statements from participants during group discussions; and written statements from teachers, parents, support and other professionals in response to an open-ended questionnaire.

The second case study involved a kindergarten that catered for about 60 children aged three to five years and their families, and was staffed by two teachers. The participants in this study included a child with severe multiple disabilities and his family, his kindergarten teachers, a student teacher on practice at the kindergarten, and the other families and children who attended the kindergarten during the period of the study. Other participants were support and health professionals involved with the child’s education and care at the time of the project.

The third case study was undertaken in a childcare centre catering for about 20 children from birth to school-age and staffed by four teachers. The participants in the childcare case study included a child with Down syndrome and his family, his childcare teachers, and the other families and children who attended the centre during the period of the study. Other participants were support and health professionals involved in the child’s education and care at the time of the project.

In the latter two case studies, Kerry spent 10 months actively involved in the daily program of the early childhood settings, looking at how the centres and their communities included children with disabilities and their families. Kerry focused on how inclusion was viewed and experienced by those under study. She was also interested in documenting any issues or experiences which might be described as ‘exclusionary’. To find out how things happened and why, Kerry conducted individual interviews with the parents of children with disabilities, the early childhood teachers and student teacher, some parents of other children, support staff and health professionals. She talked with children about their experiences at the centres. She also observed and recorded what happened to the children with disabilities and discussed with participants their understandings of events to do with issues of inclusion or exclusion. As well, Kerry collected documents to help her understand more about the inclusion and teaching of children with disabilities at the centres.

The research strategies used to collect data in the case studies allowed her to interact with participants and explore their experiences in particular contexts. She used participant observation to understand and experience issues first-hand and from the participants’ points of view; interviews, to add greater depth of understanding about what happened to children with
disabilities and families and why; document analysis, to search for further meaning on disability and inclusion; and questionnaires, to elicit additional information on inclusion and exclusion experiences. The data collected (field notes, interview transcripts, questionnaires, people's comments/statements and documents) was examined and central discourses, ideas and themes were identified (Bogdan & Biklen, 1998; MacNaughton, Rolfe & Siraj-Blatchford, 2001).

These case studies generated some understandings about inclusion and why some children may be excluded in some early childhood settings. In this article, we highlight some of the issues. We hope this information encourages early childhood communities to continue to debate and reflect on issues around disability, inclusion, exclusion and quality early childhood education, so that we may move towards developing more inclusive settings for all (Davis, Gunn, Purdue & Smith, 2007; Gordon-Burns et al., 2010; Gunn, Child, Madden, Purdue, Surtees, Thurlow & Todd, 2004; MacArthur, Purdue & Ballard, 2003; Purdue, 2006; 2009).

Exclusion in early childhood education

The case study component of the research highlighted a range of barriers that compromised inclusion for young children with disabilities and their families in early childhood education. We saw these barriers as relating to four areas of exclusion: understandings, policies, practices and resourcing issues. The following sections look at each of these areas in turn. We then look at the implications of the findings for future policy and practice.

Exclusionary understandings

The research strongly suggested that the beliefs, attitudes and values held by teachers and others in relation to disability and inclusion are integral to what children with disabilities and their families will experience in early childhood settings. The research showed exclusion occurred, to varying degrees, as a result of some teachers, management and other professionals labelling children with disabilities as negatively different and therefore not the responsibility of regular teachers and early childhood services (Purdue, 2006).

Children with disabilities were commonly thought of as abnormal and as having problems that needed to be fixed by outside experts. In particular, it was common for children with disabilities to be constructed as ‘special’ children, having ‘special educational needs’ and therefore in need of a ‘special’ education, preferably somewhere other than a regular early childhood centre.

When children’s education and care needs were deemed as more challenging than the ‘norm’, some teachers and management (in particular) made decisions relating to the attendance and participation of children with disabilities in their centre in terms of the type of disability, adult comfort, professional interests, teacher and centre capabilities, concerns for other children’s education, and what was in the ‘best interests’ of the child with disabilities rather than in terms of the rights of children with disabilities and their families to access early childhood education. Here is what one teacher in the study had to say about the attendance of a child with disabilities at her centre. She:

… felt that the centre didn’t have the facilities, resources or staff numbers to meet the child’s needs [and therefore the child and family left] … it made me aware of the need for our centre to become equipped to cater for children with disabilities, to have resources and seek training also in this area.

The attendance and participation of children with disabilities elicited significant negativity, not only from some teachers and management but also from some of the other parents of children attending early childhood services. In particular, some parents of children without disabilities considered the attendance of children with disabilities to be a problem and that mainstream early childhood education was not the right place for some children. Some believed their own children’s education would be negatively affected by the presence of children with disabilities. In particular, a common assumption was that the teachers’ time would be taken up attending to these children, and that the other children would miss out on a quality education (see also Stark, Gordon-Burns, Purdue, Rarere-Briggs & Turnock, 2011).

A teacher reported that ‘A parent of a disabled child was told about another parent at a dinner party moaning and groaning and discussing the disadvantages to their child in having a disabled child in the centre’. Another teacher reported that, at their centre, ‘a child with a disability, his sibling and parent were ostracised completely (by other parents)’. In another early childhood centre a parent was told by a concerned friend that ‘they [some parents of other children attending] are going to get a petition to stop her child going there [local kindergarten]’. Such incidents resulted in children with disabilities and their parents being made to feel unwelcome, isolated and unsupported in centres and their local communities. Some parents of children with disabilities remarked that such attitudes and exclusion took their toll. For example, one said:

… when comments from parents were more than I could take [the] supervision team acted quickly … therefore playcentre ended up a very positive experience for both my son and myself, but without addressing his needs it would have become stressful for both of us; his self-esteem would have
been shattered, and I may well have decided to keep him at home, although that would have put different and additional stressors on our family.

Understandings about how children learn and develop also affected teachers’ ability to provide a high-quality inclusive education to children with disabilities. Although early childhood education in New Zealand is influenced by a sociocultural curriculum (Ministry of Education, 1996a), when it came to teaching and including children with disabilities in curriculum, some teachers reverted to philosophies and practices associated with a developmental framework for understanding learning and development. For example, some teachers described using teaching approaches with children with disabilities which might otherwise be considered unusual or inappropriate. In one centre a teacher struggled to decide on a placement for a two-and-a-half-year-old child with Down syndrome:

... suddenly [I] thought maybe it’s not quite right for him to be with the over-twos, maybe he should be with the under-twos. It was just really tricky. Do I accommodate his developmental age or do I want him to be with his peers?

In another centre, children with disabilities were not included with their age peers because:

[children with disabilities] are included in the under-two group which is basically a 1 to 4 ratio. This makes it easier to include them in whatever activities are available ... challenges to inclusion is to restructure our centre to allow for our special needs children to be fully integrated with ... children of their chronological age.

Research has highlighted that child development theory can create discriminatory and exclusive environments and can be seen as a barrier to inclusion because it encourages teachers and others to pathologise disability as a problem within children, thus leaving social, cultural and physical environments unchallenged and unchanged (Fleer et al., 2006; Lyons, 2005).

Exclusionary policies

Despite the legal requirements and policies giving children with disabilities the right to early childhood education, some of the children and their families who participated in this research were denied this legal right because of exclusive policies and practices at their local centres. Some parents had difficulties finding an early childhood centre that would accept their child. Others reported that their acceptance and ‘inclusion’ was conditional upon a particular criterion being met. Among the conditions imposed on children and families were parents being allocated time-slots for their child’s attendance, parents or other family members being asked to fill in for support staff because a reliever could not be found, and, if this were not possible, being told to keep their child at home for that particular session or day. Some parents were required to pay for additional support for their child to attend a centre. Parents were phoned to come and collect their child from the centre before the session ended if the teachers were finding they were ‘unable to cope’. There were instances of management placing restrictions on the number of children with disabilities who could attend the centre at any one time, and of some parents being informed about the lack of ‘ability of the centre’ to meet their child’s needs.

In some settings, when additional resourcing was guaranteed, enrolment was accepted. In these instances it seemed evident that resources brought more positive attitudes. However, as Slee (1996a) states, inclusion in such a case is thought of as simply a resource problem requiring a technical solution, which fails to recognise the complexity of the issues around inclusion.

It was also evident in this study that inaccessible early childhood environments—where there were steps rather than ramps, narrow doorways, inadequate toileting areas and other physical barriers—caused problems for some children with disabilities and their families. The research showed that, on this basis alone, some centres simply denied or restricted children’s access and participation because of poorly designed environments. Some teachers reported finding it difficult to persuade parent committees to spend money on the centre environment to ensure children with disabilities had access. One teacher reported she found it difficult ‘... dealing with the parent representatives on the committee who have their own child’s best interests at heart and who cannot see the advantages of having special needs children in the centre’. Another teacher said their association had a policy that:

... if a child comes in, and you haven’t got a wheelchair ramp and special toilet facilities, or whatever, you have got a right to say no because there is a kindergarten down the road that can take a child that has got those facilities.

Hence, in some early childhood settings, parents were dealing with teachers and other people who apparently viewed disability as an unwelcome difference and did not see the disabled as a valued part of ordinary community life. As such, they seemingly were not prepared to make centre changes to support the inclusion of children with disabilities. As a consequence, families typically experienced an ongoing, and at times exhausting, struggle to get centres to accept, teach and include their children. Parents reported finding they had either to fit in with the decisions of teachers, management and other professionals, or find another centre which would cater for their child’s needs. In
some early childhood settings, then, being disabled meant not having the same rights and opportunities as others. As one parent said:

... you still have to fight for these kids, haven’t you? Ohhh, it gets you down after a while. And when they are more disabled like this, by the time you work with them at home as well, you haven’t got the time to fight for them ...

Another parent explained:

You know, they say legally everybody has to take children with disabilities. I mean, it is law they have to, but if they really don’t want you they have got other ways of shifting you, and I think that is what has to be seriously looked at too.

Exclusionary practices

The research also showed that the practices of some early childhood teachers and other professionals acted as a barrier to children with disabilities, full participation and inclusion in the curriculum and life of the centre. One of the biggest barriers was teachers who did not want to teach them, or felt unable to teach them.

While early childhood policy and practice guidelines emphasise that teachers are responsible for diverse groups of children, some teachers who participated in this study indicated that the primary responsibility for teaching children with disabilities was that of support personnel—and not part of their job. Some teachers relied on support staff to provide access to the program for children with disabilities, even though some of these itinerant professionals lacked early childhood knowledge and experience and therefore may not have fully understood the appropriate curriculum, philosophies, policies and practices. In some settings, the support staff knew more about the children with disabilities—their strengths, interests and needs—than their teachers did. One early childhood teacher said, for example, that she takes a ‘back seat’ at planning meetings for a child with disabilities at their centre because her teacher aide ‘is the one that knows where she is at, what she is doing’. One consequence of leaving these children with ‘untrained’ aides was that the children interacted more with them than they did with their teachers and peers. This situation limited the children’s access to quality teaching and to competent role models to learn with and from, and denied them the opportunity to achieve the same goals set for other children, and age-appropriate socialisation through interactions with peers. And, of course, if teachers do not know children well, they will have difficulty planning a meaningful and relevant curriculum to support their learning and development.

Exclusion also occurred because some teachers were not prepared to incorporate individual plan (IP) goals and early intervention services into the centre’s daily program, nor would they adapt curriculum or teaching strategies to meet the needs of a child with a disability, which left parents with no other choice but to go elsewhere or attend to their child’s therapy needs themselves. For example, one parent who wanted her child’s physical therapy needs met in the centre said:

I have actually been given one of those scooter boards from the physio and often it is a great idea [to use it in the centre], but I couldn’t do it at our centre because they are a very structured sort of a place. A lot of it is sort of left up to the parents to do.

If teachers are not thinking about goals written in children’s IPs, or about the learning contexts that best support individual children to learn, the needs and rights of children with disabilities may not be met (MacArthur, Purdue & Ballard, 2003).

Children with disabilities were also being excluded in some of the settings featured in the study as a result of the practices of special education, health and other itinerant professionals. For example, some itinerant professionals adopted an expert approach to support that conflicted with the curriculum, philosophies and practices of early childhood settings. The researcher was told of, and witnessed, cases of itinerant professionals ‘velcroing’ themselves to the children, removing the children from the program, working one-to-one with a child, or implementing a separate program from that in the regular setting.

In these instances, there was a focus on holding special activities and sessions to teach skills in isolation, rather than on the importance of play in children’s learning and development; of embedding learning opportunities into curriculum and the everyday life of the centre; and of facilitating peer and adult relationships (Horn, Lieber, Sandall, Schwartz & Wolery, 2002; MacArthur, 2004; MacArthur, Purdue & Ballard, 2003). One teacher described professionals who had forbidden other children in the centre to use equipment. A teacher from another centre had a similar experience, and identified this approach thus:

And that sort of behaviour tends to set up barriers and anti feelings from the other children and the other parents. We had an example where somebody came into the centre and actually removed puzzles from a child who was playing with them and said, ‘You can’t play with this any more’ and took two or three and sat down to work with the child with special needs and told the rest of the centre that those puzzles will be kept for that child and none of the others could use them. And they were actually the centre’s puzzles.

Such practices isolated children with disabilities from their peers and teachers, excluded children...
with disabilities from the curriculum and important opportunities to learn and develop, and took the responsibility for children with disabilities away from their teachers. These practices were also symptomatic of, and further encouraged, negative assumptions about disability, especially the one that maintains the needs of children with disabilities are ‘different’. As such, these children require ‘special’ intervention, and teachers do not have to take responsibility for them (Purdue, 2006).

**Resistance to exclusive discourses and practices in early childhood settings**

The experiences reported here tell of the exclusive and discriminatory barriers children with disabilities and their parents encountered while accessing and participating in their community early childhood centres. However, some of the barriers did not go unchallenged. The research also illustrated some of the ways parents and others resisted disablist attitudes and practices. For example, some parents resisted by asserting their child’s legal right to participate in their community centre and advocated that centres change so they did not deny families their rights. In some cases, teachers actively worked to promote acceptance and inclusion of children with disabilities by talking with other parents about the attendance and participation of these children at the centre, and emphasising rights and learning opportunities for all. Teachers and other parents supportive of inclusion challenged views and attitudes that could perpetuate exclusion and discrimination, and modelled inclusion in the centre and community.

It was also evident that teachers supportive of the inclusion of children with disabilities in their centres resisted the practices of some support and health professionals that were seen to be exclusive. In some centres, teachers worked with professionals and suggested ways they could adapt their practices so that intervention occurred within the curriculum. Parents and teachers questioned and challenged resourcing and funding arrangements that created pressures for exclusion, such as conditional attendance. Some teachers actively advocated and fought for the necessary resources to support children’s learning and full participation in centres. The presence and participation of children with disabilities in regular early childhood centres can also be seen as a form of resistance.

In other examples, teachers were seen to challenge children without disabilities misunderstandings, stereotypes and fears about children with disabilities, and helped them to develop alternative perceptions. Some children without disabilities resisted the practice of support workers being ‘velcroed’ to children with disabilities by indicating to adults that they should ‘go away’ so that they could play together. There were other examples which showed that participants used resistant discourses embedded within social and rights models to change perceptions about disability and form new understandings that would foster more inclusive attitudes and practices.

**Discussion and implications of the findings**

It is evident that addressing social injustices and inequities for children with disabilities and their families in early childhood education requires attention to the understandings, policies and practices that act as barriers to inclusion and to resourcing issues (see also Purdue, 2009).

**Transforming understandings for inclusion**

This study showed there were particular constructions and understandings about disability in use in early childhood settings that were associated with unfriendly, inequitable, and discriminatory practices and which acted as a barrier to inclusion for children with disabilities and their families. These exclusionary discourses were characterised by a language of difference and deficit, of special needs, help, intervention and cure, and emphasised that it is the special education profession that knows what is best for children with disabilities.

Change to how disability is named and understood is therefore seen as important, as this can result in alternative social values and social arrangements (Corbett & Slee, 2000; Ware, 2004). The paradigmatic shift needed is one that moves away from medical, special education and other deficit models towards alternative forms of knowledge that will aid the development and effective implementation of policies and practices for inclusion (Allan, 2003; Lyons, 2005; Macartney, 2008a; 2008b). Informing teachers in early childhood education about new theories of disability will be critical to the reconstruction of inclusive centre cultures and central to the change process (Neilson, 2005).

All children in early childhood settings require teachers who view them as competent and confident and play an active role in their learning (Ministry of Education, 1996a). Therefore, teachers need to reflect critically about how children learn and develop and about their own roles and responsibilities in facilitating children’s learning. The task of teachers is to minimise barriers to learning and participation by adapting their teaching and the curriculum to provide young children with opportunities to learn and develop through social interactions with others (MacArthur, Purdue & Ballard, 2003).

**Transforming policies for inclusion**

The policies of many of the centres in the study presented a discourse in which disability is seen
as a problem or burden for teachers. The many statements from study participants that focused on the technical requirements needed for managing this difference were evidence of this. Similarly, clauses of conditionality were a common feature in centres’ policies, which made the education provided to children with disabilities negotiable, a finding that supports work by Slee (1996b). In these kinds of contexts, individual centre policy often legitimised discrimination and exclusion because it located the source of problems within the child, absolving the centre from responsibility for meeting the rights and needs of all children.

It is therefore important that teachers and management review their individual centre policies to ensure they truly abide by national legislation, early childhood policy and other relevant documents (Gunn, 2003). Government agencies responsible for the monitoring and evaluation of early childhood services must also ensure that early childhood settings are acting legally in policy and practice, and quickly intervene if this is not the case (Minister for Disability Issues, 2001).

Transforming practices for inclusion

A particularly important aspect of the development of more inclusive practices in early childhood is negation of the idea that there are not two distinct types of children, special and regular, who require different teaching methods and separate education (Ballard, 2004). Inclusive education is about teachers recognising the differences in children’s learning and responding positively to this through curriculum and pedagogy that supports their inclusion (Foreman, 2008; Glass, Baker, Ellis, Bernstone & Hagen, 2008; MacNaughton & Williams, 2009).

The research emphasises that teachers are the key to reform and must therefore be adequately supported and encouraged (Booth, Ainscow & Kingston, 2006; Booth, Nes & Stromstad, 2003; Corbett, 2001; Purdue, Gordon-Burns, Gunn, Madden & Surtees, 2009). However, families of children with disabilities should not have to wait for teachers and centres to ‘prepare themselves’ to teach and include their children (Odom, 2002). Teachers need to be well prepared to teach all children. Pre-service and in-service teacher education has a critical role to play in addressing the negative constructions surrounding disability, and in building positive attitudes and commitment toward the education of children with disabilities.

Resourcing to support inclusion

For many children with disabilities in this project, access to their neighbourhood early childhood service was simply opposed or made conditional because of resourcing constraints. In some centres, teachers and managers used the lack of resources/facilities as an excuse to exclude children who were assumed to require more work, attention, money, or changes to programs or teaching practices. Elsewhere, supportive teachers, along with parents and advocates, had either fought or were continuing to fight battles to obtain the necessary resources that would allow children with disabilities to genuinely participate in regular early childhood settings.

Both these scenarios are, however, a reflection of ableism. As Slee (1996a) suggests, equity will not be achieved by centres simply bringing in additional resources for children with disabilities. This is because an emphasis on resources focuses almost exclusively on the child with a disability, rather than on the structure and culture of education settings, and on how these may be changed to enable rather than disable children (MacArthur, Purdue & Ballard, 2003).

How support for diversity is provided in a post-special-needs era is part of the ongoing projects for inclusion reform (Slee, 2003). Strategies exist that enable regular educational environments to respond to student diversity (see for example, Ballard, 2004; Booth et al., 2006; Corbett, 2001; Foreman, 2008; Odom, 2002). This body of work calls for mobilisation of existing resources within the educational setting and community. For example, resources may be found in children, parents/carers, communities and teachers; in changes in cultures, policies and practices; and through working out issues through critical dialogue and reflection, creativity and risk-taking, cooperation and collaborative problem solving, partnerships and shared responsibility.

But, however the matter of resourcing is considered, it has to be seen as a matter of equity and social justice: children with disabilities should have all the resources they need as of right and not as a result of special pleading. In essence, transforming education for inclusion requires mainstream early childhood education to be adequately resourced to meet the rights of all children.

Conclusion

Striving for inclusive educational environments and communities requires all of us to challenge at all levels the discourses and practices which exclude children with disabilities, and take steps to eliminate any barriers that lead to discrimination and exclusion for children with disabilities and their families. This is not an easy task, but a necessary one if we really want to make a difference.
References


Macartney, B. (2008b). “If you don’t know her, she can’t talk”: Noticing the tensions between deficit discourses and inclusive early childhood education. Early Childhood Folio, 12, 31–35.


Introduction

There has been a range of research and conceptual discussions focused on the role of book reading with young children, particularly involving parents in home settings (Fletcher & Reese, 2005). It is generally assumed that reading books to young children is an appropriate activity, providing an excellent context for enhancing language and early literacy skills, within an emotionally supportive setting (Justice & Kaderavek, 2003). Factors in the home environment that impact on literacy include socioeconomic status (SES), caregiver reading capacity, living arrangements, and caregiver stress (Phillips & Lonigan, 2009). Typically, early home reading is associated with preparing children to be good readers by establishing good language, vocabulary, phonological processing, print referencing and pre-reading skills (Ezell & Justice, 2005). Not all shared book reading necessarily leads to enhanced progress in literacy (Phillips, Norris & Anderson, 2008), with an active or passive home literacy environment also affecting that progress (Burgess, Hecht & Lonigan, 2002). Further, the home environment can be associated with negative effects on children's language (Bishop, Price, Dale & Plomin, 2003), and parents may benefit from training, for example, in specific print referencing (Justice, Kaderavek, Fan, Sofka & Hunt, 2009). The terms ‘shared book-reading’ and ‘interactive shared book-reading’ are both cited in the research literature, with the former describing the child being read to without a focus on interaction (Kisker & Lonigan, 2006) and the latter emphasising active child participation (Justice & Ezell, 2002; WWC, 2007).

Over the past 25 years, there has been considerable research suggesting that children's picture books can function as a learning context for good interactions, with initial studies reporting naturalistic data and involving children whose language was developing normally (Moerk, 1992; Senéchal, Cornell & Broda, 1995). Evidence has increased that using books as a stimulus for encouraging child talk through book-related conversations positively impacts on child language skills, both expressive and receptive (Colmar, 1999, 2003; Crowe, Norris, & Hoffman, 2000; Whitehurst et al., 1988), and may also impact on early literacy skills. Book reading and language research has focused on children from disadvantaged backgrounds (Hockenberger, Goldstein & Haas, 1999), or children described as being ‘at risk’ (Wasik, Bond & Hindman, 2006), and on children with language delays or disorders (Schneider & Hecht, 1995), including using books specifically to enhance early literacy skills in children with communication disorders (Ezell, Justice & Parsons, 2000).

A book reading intervention with mothers of children with language difficulties

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MOTHERS OF CHILDREN WITH significant language delays were trained to use two key strategies: first, pausing to allow child language initiations and, second, asking an open-ended question to build a conversation based on a topic chosen by the child. These strategies were implemented within a book-reading context, with generalisation to a wider range of contexts being encouraged within naturalistic settings. Significant improvements in expressive and spoken language skills, coupled with large-effect sizes on all measures, including receptive language, were achieved over a four-month period in the intervention group. A post hoc analysis confirmed that the benefits were partly dependent on an initial child vocabulary of at least 60 words. The mothers' capacity to learn and successfully use a set of simple new strategies confirms the importance of direct parent involvement in child language learning. Further, the mothers reported that the strategies were easy to implement and that they enjoyed the program.
A number of children experience considerable difficulty in language learning, impacting on both expressive and receptive language skills, potentially leading to negative outcomes for schooling and life opportunities (Ezell & Justice, 2005), including psychiatric disorders (Cantwell & Baker, 1987). Language delays and difficulties often result from child-centred factors, such as cognitive difficulties, sensory impairment, physical problems, and attention and behaviour difficulties. Because these children do not learn language readily, often despite having access to competent communicative partners in natural settings, specific intervention programs need to be implemented (Warren & Yoder, 1998). However, contextual factors, such as SES and home environment variables, are also implicated in children’s language skills learning. For example, the amount and quality of language input experienced by children can vary considerably according to SES status (Hart & Risley, 1995). Further, for children with language delays or difficulties, negative interactive patterns might develop (Colmar, 2003; Conti-Ramsden, 1994), such that ‘the child’s impairment interacts with the parent’s attempts to provide appropriate conversational language’ (Cross, 1984, p. 3).

Intervention and naturalistic observational studies have been conducted with parents and teachers, aiming to clarify which demographic and independent variables are important in book reading as a language intervention, including child age, parental SES, the level and nature of child language, contextual factors, frequency of book reading (e.g. Elias, Hay, Homel & Freiberg, 2006; Fletcher, Cross, Tanney, Schneider & Finch, 2008), and the interactive strategies used by adults (Crowe, 2000). The relative impact on child-oriented outcomes, such as progress in language and early literacy (Bus, van Ijzendoorn & Pellegrini, 1996; Mol, Bus & de Jong, 2009), has been measured. Naturally occurring child and adult behaviours, such as attentiveness and responsiveness (Girolametto & Weitzman, 2002), and the use of specific sentence types, such as questions and comments by adults, have also been examined (Arndt & Beverly, 2004). For example, asking children a question leads to a greater likelihood of further child talk (Yoder, Davies, Bishop & Munson, 1994). Generally it is recommended that parents use open-ended rather than closed questions (Ezell & Justice, 2005) and ask questions contingent on the child’s utterance or attentional focus (Colmar, 2006). However, data on adult strategies in a book-reading context is limited (Colmar, 1999).

The best-known specific intervention program incorporating interactive strategies used with book reading to enhance child language skills is dialogic reading, which was devised by Whitehurst and his colleagues (Whitehurst et al., 1988). Many intervention studies of dialogic reading have been implemented (e.g. Briesch, Chafoules, Lebel & Blom-Hoffman, 2008; Fielding-Barnsley & Purdey, 2002). Dialogic reading emphasises asking wh- questions, open-ended questions, repeating and expanding the child’s language, and using praise. Mol et al. (2009) identified a number of studies not involving dialogic reading, but including the key adult strategies of open-ended questioning, commenting, providing feedback, and so on, verifying the effectiveness of these strategies on outcome variables such as alphabetic knowledge and expressive language. Further, other interactive book-reading interventions have been implemented using similar basic techniques to those of dialogic reading (e.g. Colmar, 1999; Crowe, Norris & Hoffman, 2004; McNeil & Fowler, 1999).

A generic approach to dealing with children’s language difficulties is milieu teaching (Hart & Rogers-Warren, 1978), which arose from Hart and Risley’s (1975) seminal work on incidental teaching. Milieu teaching is an interactive naturalistic approach, focused on adults responding to topics of conversation initiated by the child. Adults respond to the child-initiated language with contingent questions to encourage the child to say more and to use more complex language linked to their chosen topic. In milieu teaching the ‘procedures turned the specification of the curriculum to be learned partially over to the child by following their attentional lead and embedded instruction into meaningful incidents across activities and throughout the day’ (Warren & Yoder, 1994, p. 249). A range of successful applications, subsumed under milieu teaching, have been developed and evaluated (Kaiser, Yoder & Keetz, 1992; Warren, 1991), with a focus on interventions for young children with language difficulties.

A limited amount of research has combined a book reading context with milieu teaching to increase child language use; however, to date no research has examined book reading within a milieu framework using an experimental design with standardised pre-post measures of child language progress. In mother–child dyads with children with language delays, McNeil and Fowler (1999), using a within-subjects design, found changes in child language were associated with some increases in mother questioning and responding to initiations. Colmar (1999, 2003) utilised the principles of incidental teaching, investigating pausing and open-ended questioning as strategies used by mothers and preschool workers in a book reading context, establishing the separate and additive impact of each strategy. Increases were observed for three- to four-year-old children with language delays in the key language skills of child initiations, utterances and turn-taking, with concomitant decreases in adult initiations, utterances and turns.

The overall purpose of the present research was to evaluate a book reading intervention program incorporating milieu teaching principles. A short, simple, easily replicated method of training was...
used, assisting parents to implement a home-based, naturalistic language intervention program. Evaluation focused on measuring changes in the language skills of children with language difficulties as standardised outcome data, using a pre-post experimental design with a waiting list control group.

The four key elements of the program, based on previous research, were:

1. The adult pausing to allow the child an opportunity to talk first, to initiate a topic of interest to them, thus ensuring child attention (Colmar, 1999; 2003).
2. Asking the child to say more on their initiated topic, using an open question or request for elaboration of the topic, thus giving the child an opportunity to use more language within a conversational context (Hart & Risley, 1982).
4. Encouraging parents to use the same key strategies in everyday settings: providing opportunities for child initiations by pausing, and being responsive to child initiations by asking contingent open-ended questions, thus encouraging the child to engage in a conversation about their initiated topic.

The key research question was:

What is the impact of the program on children's language skills?

The specific hypotheses examined were:

1. The Experimental group will perform significantly better than the Waiting List Control (WLC) group on measures of expressive language (ELQ), receptive language (RLQ) and spoken language (SLQ).
2. Post intervention, the effect size, measured with Cohen's d, will be over 0.20 (small) on measures of ELQ, RLQ and SLQ.
3. The WLC group will perform significantly better following training and intervention on measures of ELQ, RLQ and SLQ.

<table>
<thead>
<tr>
<th>Group</th>
<th>Total number of participants</th>
<th>Male</th>
<th>Female</th>
<th>Mean age</th>
<th>Age range</th>
<th>Mean spoken language quotient*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>7</td>
<td>7</td>
<td>0</td>
<td>4.3</td>
<td>3:3–5:7</td>
<td>60.43</td>
</tr>
<tr>
<td>Waiting List Control (WLC)</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>3:10</td>
<td>3:0–5:1</td>
<td>61.00</td>
</tr>
</tbody>
</table>

*Mean 100, SD 15

Method

Participants

Fourteen children (10 boys, four girls) and their mothers took part in the study, seven in the experimental group and seven in the control group. All children had language delays, seven with diagnosed difficulties and seven with no identified reason for their delays in language. Children ranged in age from three years to five years and seven months, with a mean Spoken Language Quotient (SLQ) below 62 on the Test of Early Language Development (3rd edition, TELD3; Hresko, Reid & Hammill, 1999). This figure is more than 2.5 standard deviations (SD) below the test mean of 100 (SD 15) and is described as very poor, confirming that all child participants had major difficulties in language.

Setting, instrumentation and stimulus materials

Each child was assessed at home or in preschool, in a relatively quiet room, with either the researcher or her trained assistant as assessor. The language test used was the TELD 3, a norm-referenced standardised measure of young children's language, with parallel forms and excellent psychometric properties, examining expressive, receptive and pragmatic features of language. The TELD 3 measures an expressive language quotient (ELQ), receptive language quotient (RLQ) and an overall spoken language quotient (SLQ). In addition, each mother filled in the Language Development Scale (LDS; Achenbach & Rescorla, 2000) and a demographic details form.

The stimulus materials were children's picture books, selected for their colourful, clear pictures and no more than two sentences on a page. A full list of the books is available on request.

The training program, which was provided in writing to each mother, with the child's name inserted appropriately, incorporated the four key components previously mentioned: pausing and asking contingent open questions in the context of using children's picture books in regular book-reading sessions, and using the same strategies of pausing and conversation-building in everyday settings.
Procedure

Informed parental consent was obtained and then pre-testing of 22 children, identified by early intervention services and preschool workers as having language difficulties, was undertaken using the TELD 3 (Form A), LDS, and a Parent Demographic, with a final sample of 14 children taking part. Children were randomly allocated to an Experimental group and a Waiting List Control group (WLC), with the exception of siblings or children in a single preschool being in the same group.

The mothers in the Experimental group were trained with a verbal explanation and a demonstration of the technique with their own child. Record books and written notes were provided. Six suitable picture books were made available to indicate the type and level of book that might elicit child interest, attention, and initiations. Adults were encouraged to borrow similar books from libraries or their preschool; a mailing system was also established for parents to receive books, return them, and be sent a new set. Each mother received a follow-up telephone call about halfway through the experimental period; that is after two months. Contact was possible throughout on the initiative of each mother, but did not occur.

Post-testing using the parallel form of the TELD 3 (Form B) took place after four months, and a new LDS was completed if possible. Further, structured interviews were conducted with every mother to elicit her view of her child's progress and her own experience of the program. A report in the form of a letter, with simple bar graphs depicting progress, was sent to all parents within two weeks of follow-up testing. Treatment integrity was evaluated by examining sessional record-books with book details, time and comments, and by interviewing each mother.

At this time, after four months, the mothers in the WLC group were trained in the same way as the Experimental group. They followed the program for four months, and were retested on a third occasion using Form A of the TELD 3.

In addition, the mothers of five boys from the Experimental group expressed a wish to continue the program; hence further data were collected for these individual boys, with no specific hypotheses proposed as this occurred unexpectedly during the research period. Four of the five boys were retested on a third occasion (one was ill on the testing day); these children were designated as a Continuers group. A post hoc research question was constructed: What is the impact of continuing the intervention program, for a further four months, on children's language skills?

Design and analysis

An experimental design was employed, with an Experimental group and a WLC group, who received the intervention program subsequently. Pre-testing with TELD 3 Form A (Time 1) and post-testing (Time 2) with TELD 3 Form B involved all children. Further post-testing (Time 3) of the WLC group, who began their intervention after the post-testing period, and the Continuers group was completed using TELD 3 Form A. An ANCOVA was used to test differences between the two groups. Effect size of the intervention, using Cohen's $d$, was also measured for both the Experimental group at post-testing and for the Continuers group at the second post-testing at Time 3. T-tests for paired samples were used to evaluate any effect of the intervention for the WLC group and for the Continuers group.

Results

Effectiveness of the intervention

An ANCOVA was performed to control for any pre-existing differences and to verify if there were any differences between the Experimental and WLC groups following the intervention. All alpha levels were set at $p < 0.05$. Some significant differences were noted in the predicted direction in favour of the experimental group (Table 2). For ELQ, significant positive effects were found, $F(1, 11) = 17.98, p = 0.001$. For RLQ, results were not significant, $F(1, 11) = 3.21, p = 0.101$. For SLQ, significant positive effects were found, $F(1, 11) = 12.76, p = 0.004$. Therefore, Hypothesis One was accepted as true for the expressive and spoken language quotients but not for receptive language, where the change failed to reach significance, although it was in the predicted direction.

Table 2: ANCOVA post-test results for Experimental group versus Waiting List Control group

<table>
<thead>
<tr>
<th>Type of language quotient</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>$p$ value</th>
<th>Effect size (Cohen's $d$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expressive language (ELQ)</td>
<td>Experimental Group</td>
<td>7</td>
<td>82.30</td>
<td>14.50</td>
<td>0.001</td>
<td>1.25</td>
</tr>
<tr>
<td></td>
<td>WLC Group</td>
<td>7</td>
<td>67.57</td>
<td>8.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Receptive language (RLQ)</td>
<td>Experimental Group</td>
<td>7</td>
<td>89.10</td>
<td>12.80</td>
<td>0.101</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>WLC Group</td>
<td>7</td>
<td>75.14</td>
<td>19.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spoken language (SLQ)</td>
<td>Experimental Group</td>
<td>7</td>
<td>82.90</td>
<td>14.20</td>
<td>0.004</td>
<td>1.14</td>
</tr>
<tr>
<td></td>
<td>WLC Group</td>
<td>7</td>
<td>65.57</td>
<td>16.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Further, the effect size of the intervention, using Cohen’s \( d \), was examined for each of the three language measures, with large to very large effect sizes found, including for RLQ (0.86); thus, Hypothesis Two was accepted.

A paired samples t-test was conducted for the WLC group for the intervention period from the post-test to the second post-test, and Hypothesis Three was rejected as no significant changes were found (Table 3).

### Table 3: Waiting List Control group t-test

<table>
<thead>
<tr>
<th>Type of language quotient</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>( t )</th>
<th>( p ) value (two-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELQ 3</td>
<td>71.57</td>
<td>20.54</td>
<td>0.66</td>
<td>0.533</td>
</tr>
<tr>
<td>ELQ 2</td>
<td>67.57</td>
<td>8.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RLQ 3</td>
<td>78.29</td>
<td>25.84</td>
<td>0.62</td>
<td>0.558</td>
</tr>
<tr>
<td>RLQ 2</td>
<td>75.14</td>
<td>19.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLQ 3</td>
<td>70.00</td>
<td>27.96</td>
<td>0.68</td>
<td>0.522</td>
</tr>
<tr>
<td>SLQ 2</td>
<td>65.57</td>
<td>16.09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Intervention effects for children who continued with the program

A paired samples t-test was conducted for the Continuers group for the intervention period from the post-test to the second post-test. Significant changes were observed for RLQ and SLQ, but not for ELQ. Effect sizes were calculated and a very large effect size was noted for RLQ and SLQ, with a small effect size for expressive language (Table 4).

### Table 4: Experimental Group Continuers t-test

<table>
<thead>
<tr>
<th>Type of language quotient</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>( t )</th>
<th>( p ) value (two-tailed)</th>
<th>Effect size (Cohen’s ( d ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELQ 3</td>
<td>87.25</td>
<td>8.96</td>
<td>3.00</td>
<td>0.058</td>
<td>0.24</td>
</tr>
<tr>
<td>ELQ 2</td>
<td>85.00</td>
<td>9.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RLQ 3</td>
<td>107.50</td>
<td>19.74</td>
<td>3.74</td>
<td>0.033</td>
<td>1.48</td>
</tr>
<tr>
<td>RLQ 2</td>
<td>84.00</td>
<td>10.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SLQ 3</td>
<td>97.00</td>
<td>13.90</td>
<td>4.10</td>
<td>0.026</td>
<td>1.32</td>
</tr>
<tr>
<td>SLQ 2</td>
<td>81.25</td>
<td>9.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Post Hoc analysis of the successes and non-successes

A post-hoc analysis was performed such that the 14 child participants were classified as successes (10) or non-successes (4), regardless of whether they were originally allocated to the Experimental or WLC groups. As all children were involved in the intervention, this analysis enabled an exploration of the possible reasons for the large gains observed in some children and the failure to make improvements observed in others.

For the children who were successful, changes were substantial across the three language areas. The mean changes and SDs presented (Table 5) are following four months of intervention only, whether this occurred for the children in the original Experimental group (pre- to post-test) or when the child was in the WLC group (post-test to second post-test).

### Table 5: Means and Standard Deviations (SD) for successes

<table>
<thead>
<tr>
<th>Time</th>
<th>ELQ (SD)</th>
<th>RLQ (SD)</th>
<th>SLQ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>66.90 (11.06)</td>
<td>74.70 (15.55)</td>
<td>64.90 (14.58)</td>
</tr>
<tr>
<td>Post-test</td>
<td>85.20 (13.81)</td>
<td>93.50 (14.53)</td>
<td>87.30 (15.56)</td>
</tr>
</tbody>
</table>

Data for the children who were not successful is presented in Table 6, noting that for all measures there is a decline recorded for standard score means; thus child language skills were not increasing at an expected level.

### Table 6: Means and Standard Deviations (SD) for non-successes

<table>
<thead>
<tr>
<th>Time</th>
<th>ELQ (SD)</th>
<th>RLQ (SD)</th>
<th>SLQ (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>65.00 (3.65)</td>
<td>65.25 (8.66)</td>
<td>58.25 (6.85)</td>
</tr>
<tr>
<td>Post-test</td>
<td>56.25 (5.38)</td>
<td>59.25 (7.23)</td>
<td>49.25 (7.41)</td>
</tr>
</tbody>
</table>

### Summary of findings

Following program training and the first intervention period of four months, the Experimental group made significant gains in expressive (\( p = 0.001 \)) and spoken language (\( p = 0.004 \)) when compared to a control group. No significant change was observed in receptive language (\( p = 0.101 \)). The effect sizes or amount of change in language skills were large to very large using Cohen’s \( d \), where 0.20 is small, 0.50 medium, and 0.80 is large (Osborne, 2008). For expressive language, there was an effect size of 1.25, and for spoken language, the effect size was 1.14. Although the receptive language result did not reach significance, the effect size was large at 0.86. An effect size of 0.80 is considered large in early intervention programs (McCartney & Dearing, 2002); in the case of the present study, all effect sizes for the three language measures were above 0.80.

No significant changes were noted for the WLC group means during the intervention period, although the post hoc analysis confirmed that three of these seven children did make gains.
Analysis of the findings for the Continuers group of five children, with four available for a third testing, showed that, while expressive language did not increase further ($p = 0.058$, not significant), there were major improvements in receptive language ($p = 0.033$) and the overall spoken language quotient ($p = 0.026$). Effect sizes were very large for the receptive and spoken language measures, 1.48 and 1.32 respectively.

All mothers were interviewed both before and after the intervention and their verbal responses recorded. In addition, they kept records of books read, with times, dates and comments. Most mothers were positive in their post-test interviews and had maintained full records. They were enthusiastic about the positive changes in their child’s language skills. Four mothers had minimally implemented the program, with three citing child non-cooperation as the reason.

**Discussion**

The training of mothers to implement a program aiming to change the pattern of adult–child language interactions led to major improvements in the expressive and overall spoken language skills of a group of young children with very delayed language, as demonstrated by significant differences in favour of the experimental group coupled with large effect sizes. The program used a milieu framework with components previously researched, but not used in combination, nor using an experimental pre-post design. Although numbers were small, this is not uncommon when clinical samples are utilised, particularly when involving young children with language and communication difficulties. This discussion explores the findings, acknowledges limitations, and provides some practical and conceptual underpinnings to explain the results, noting that further research in this area will be appropriate.

Adults generally initiate and dominate conversations with young children with language delays (Colmar, 1999). Unfortunately, the effect is to limit the child’s opportunities to communicate, and thus to use and learn language. When trained to pause, listen and interact using open-ended questions, mothers allow opportunities for child initiations and facilitate child-led conversations (Colmar, 2003; 2006). Parents were readily trained and became empowered to work successfully with their own child.

The use of book-reading in a child-centred format, with child choice ensuring their attention and motivation, led to a rapid positive shift in child expressive language skills. The book-reading context functioned, in effect, as a ‘practice’ time, both for the mother to learn the technique in a semi-structured setting and for the child to experience a conversation on their choice of topic in an enjoyable, emotionally warm context. In addition, books are a wonderful source of conversational topics with the advantages of attractive picture stimuli, a range of potentially new and varied vocabulary, and a storyline to enhance conversation building.

Generalisation of the technique, and thus opportunities for more conversations, was created when the mothers in the study used pausing and open questioning as often as possible in their everyday conversations with their child, as well as engaging in regular book reading.

Some early language programs are complex and parents need extensive training (e.g. Kaiser, Hester, Harris-Solomon & Keetz, 1994), whereas the procedures used in the present study involved a single training session, provision of sample children’s picture books and a follow-up phone call during the intervention period. The study’s key characteristics were accessibility, simplicity and effectiveness, as confirmed by the participants.

Mothers also reported how much they enjoyed the program. They realised that changing from a pattern of being directive and controlling to one of pausing, listening and facilitating was the key to the child’s progress. Comments in follow-up interviews included: ‘it unlocked him’; ‘he was anxious, now he’s happy and confident’; ‘giving him control and choice has made an enormous difference—it is a much more effective way for him to learn’. In general, feedback from the adult participants was very positive.

The inclusion of a second phase of intervention for the control group, who functioned as a waiting list control, meant these children also received the intervention. Their mothers were trained and encouraged to implement the techniques for four months, when further retesting took place. Although no significant differences were noted, small mean gains did occur, and three children made good progress.

Interestingly, the children in the experimental group whose mothers continued the program for a further four months made significant progress in receptive language, with large additional gains recorded, suggesting that the technique has important differential continuing effects over time. Significance was not reached for expressive language, although the children did make some small gains, suggesting that expressive language was initially more responsive to the intervention strategies, while in the second four months these skills were maintained and consolidated. In contrast, receptive language skills appeared to need a longer period of intervention for changes to become measurably significant, such that at four months changes were evident but the results not statistically significant, whereas the results were significant after eight months. Importantly, effect sizes for receptive language were still large at 0.86 in the first four months and very large at 1.48 in the second four months, confirming that progress was made during both intervention periods.
The post hoc evaluative analysis highlighted that, although 10 children made excellent progress, four of the 14 children (all in the WLC group) made no progress; indeed, their mean standard scores dropped. Three of the four non-successes’ mothers confirmed their non-participation, although they had initially intended to complete the intervention. The vocabulary of three children was very small and thus child initiations were limited, presenting a challenge for the mother in engaging with her child and implementing the strategies. Further, a floor effect in the TELD 3, as a measurement instrument, may have impacted negatively for children with limited language, such that improvements observed by the mother and assessor in one case were not measured well at the lower end of the test. Finally, as the study was consultative in style, mothers’ choice of books, based only on initial advice, may not have been appropriate.

The key variables impacting on a child’s successful response to the program were that:

1. The child had an existing vocabulary, as reported by mothers using the LDS, of at least 60 words, regardless of chronological age and language age relative to chronological age. Typically, children with a lower vocabulary also had significant additional disabilities, including diagnosed autism, moderate intellectual disability and cerebral palsy, with observable difficulties in attention and behaviour.

2. The child’s mother actually conducted the program, as evidenced by their recording of book-reading sessions, their verbal report of participation, and their use of a number of books.

In contrast, when the child’s initial vocabulary was reported to be below 60 words and/or the mother did not regularly use the strategies in a book-reading context, children made little or no progress.

This first conclusion suggests that children with very limited language vocabulary would benefit from pre-linguistic language interventions to establish higher levels of vocabulary before implementing the strategies (Yoder & Warren, 2002). Vocabulary is a precursor to verbal initiations, acknowledging that initiations are a prerequisite for maternal use of incidental teaching (Colmar, 2003; Warren & Yoder, 1998). The second point indicates it is important to find ways of selecting mothers likely to implement the program, and/or deciding which mothers would need more support to participate (Brookman-Frazee, 2004). It is also possible that the second group of mothers, having had four months without support, may have been less motivated to participate in the program, confirmed by the fact that the four children who were non-successes were all in the WLC group.

It is important to acknowledge that, although previous research confirms the relevance of each component in the program, it is not possible to be certain exactly which components, separately or in combination, were critical to ensuring the present study’s success. Further, in summarising the significance of parents’ and children’s interactions regarding book reading and storytelling, Aram (2008) noted there is a range of plausible outcomes yet to be explored, including affective and social impacts, confirming that further research with more dependent measures is needed.

In summary, a simple, consultative intervention was implemented with mothers providing children with two opportunities: (a) to initiate conversations and (b) to respond to an open question, and therefore to participate in a conversation about their chosen topic within a book-reading context. Experimental data confirmed that children’s language generally improved significantly, and with large effect sizes. Thus the intervention was effective and made a positive and important difference to many of the children involved.

The key practical implication of these findings is that the book-reading language program, which is easily implemented, offers a proven approach for early childhood workers, speech pathologists and psychologists to use in advising parents about successful strategies they can use at home and incorporate into their daily routines.

References


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